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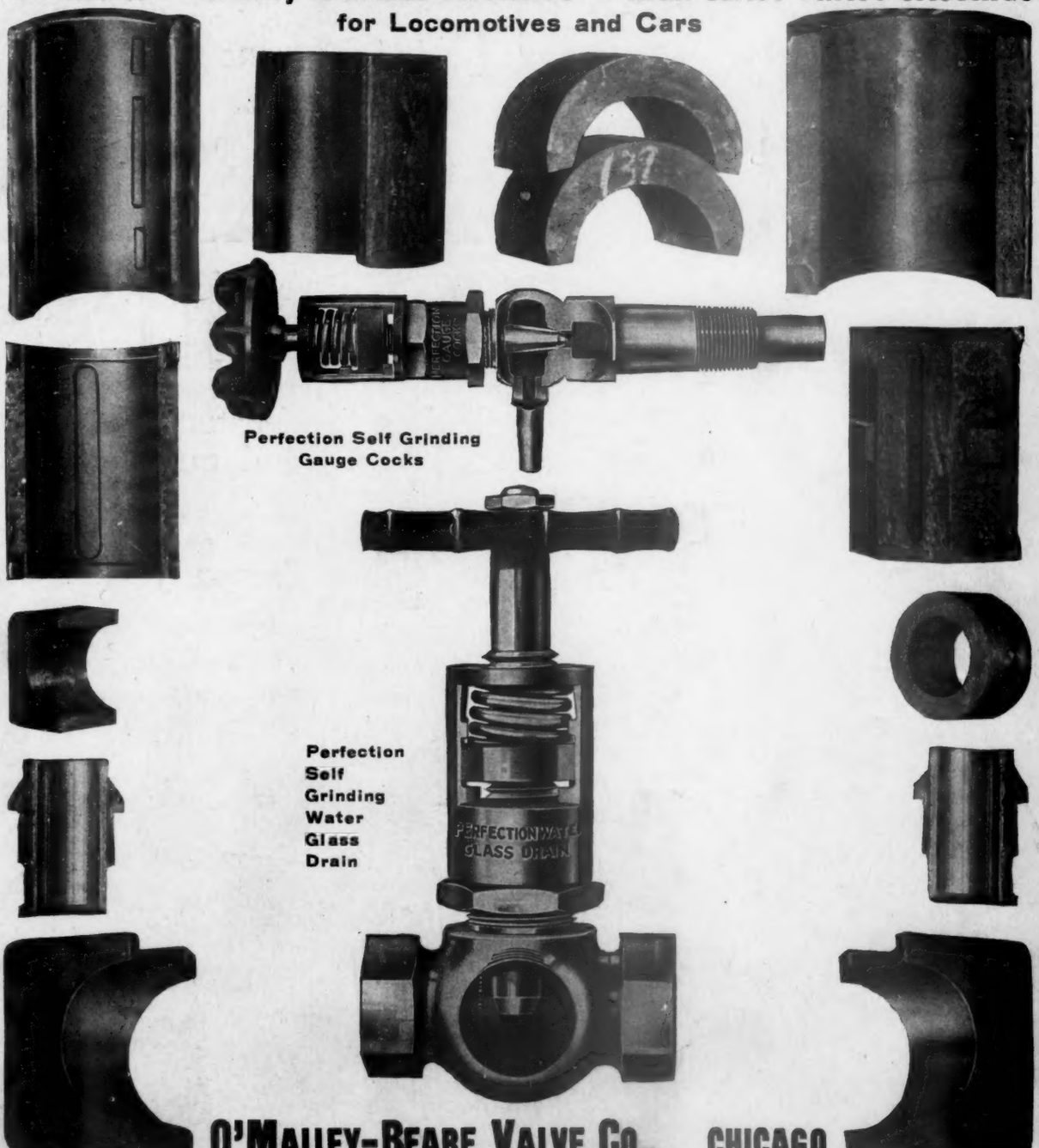

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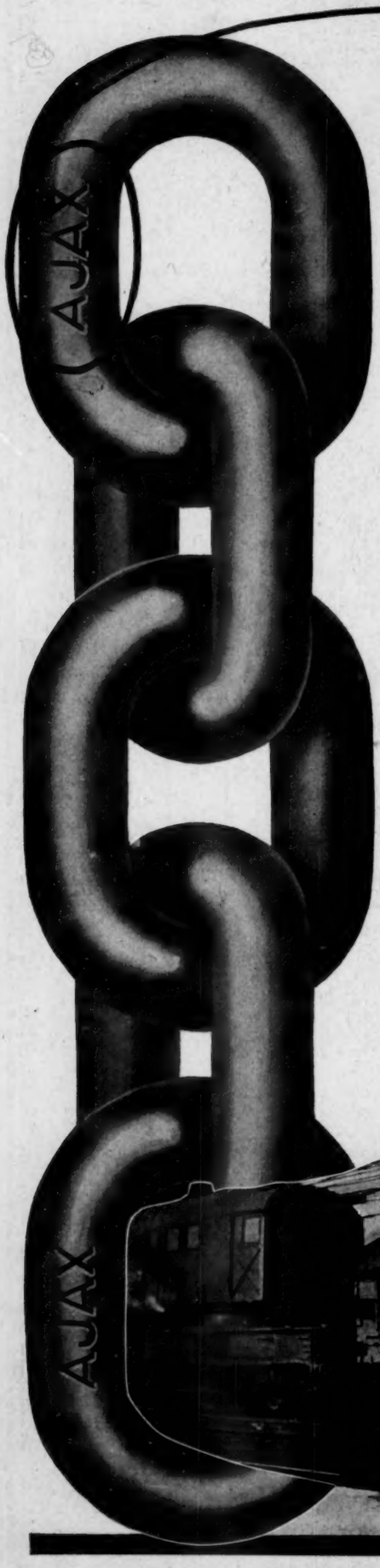

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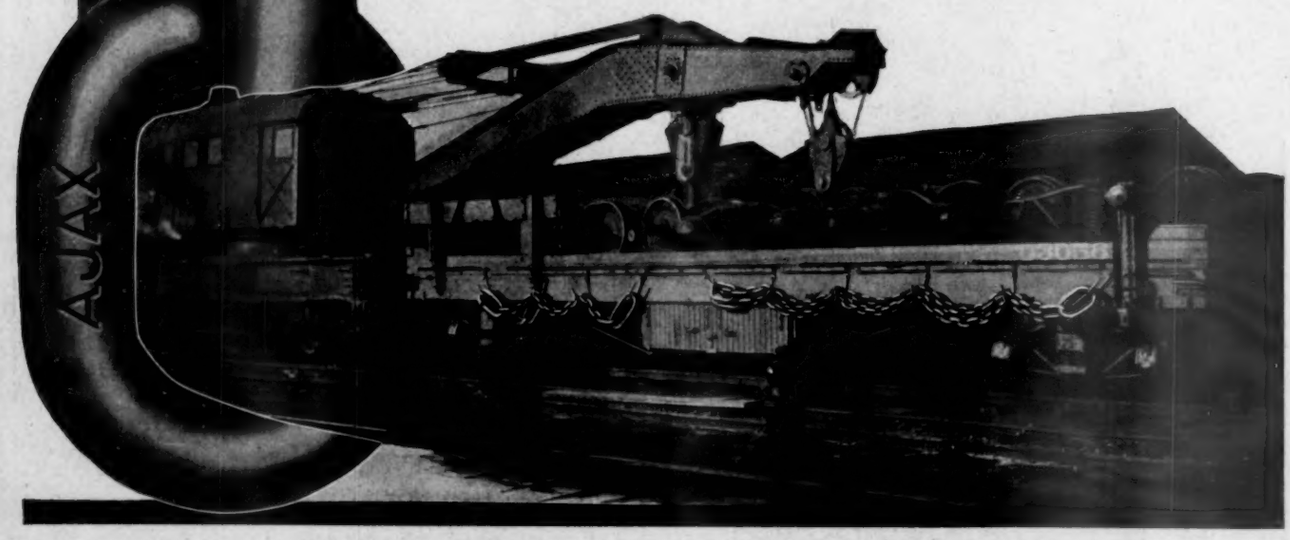

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Make It a Real Convention

THE decision of the Mechanical Division of the American Railway Association not to hold a regular convention in 1923 has caused some surprise. The decision is attributed to conditions existing in the mechanical departments and in the Mechanical Division itself caused by the shop employees' strike. The mechanical officers have been busy most of the time since July 1 fighting the shop employees' strike and attempting to remedy the effects in the shops and upon railway equipment which have been caused by it. Never in the history of the railroads were any of their officers subjected to a severer test or required to do more arduous, constant work than the mechanical officers have done within the last four and a half months. Not a few of them have been attending not only to their ordinary duties but spending a great deal of time and energy in overalls doing work which previously was done by employees who went out on strike.

In consequence of the strike the conditions in the shops of many railroads are still very unsatisfactory. The principal mechanical officers have had to devote so much time to duties made necessary by the strike that ordinary meetings of the committees of the Mechanical Division have not been held, and in fact it has even been impossible to organize many of the committees. Furthermore, many mechanical officers have expressed fear that they will not be able to do any considerable amount of work on the reports during the rest of the present year.

The conditions which exist and which will continue to exist for months to come do not seem sufficient, however, to make it necessary to hold merely what is called a "business meeting" in 1923.

When next June, the usual month for the mechanical conventions, comes, one year will have elapsed since the shop employees' strike began, and largely because of the unsurpassed energy and loyalty which have been shown by the principal mechanical officers and by many of the supervisory officers and foremen, the railways are handling virtually as much freight business as they ever did before, and in spite of conditions in the shops are steadily reducing the amount of bad order equipment. The existing conditions undoubtedly will be much improved within the seven months which will elapse before the regular time for the mechanical convention. While it probably will not be possible to hold the usual committee meetings and prepare the usual reports meantime, it should be possible to arrange for the preparation and presentation of some very important papers on timely subjects for discussion at the meeting. Furthermore, there are many important subjects concerning which valuable interchanges of experience and opinion could be secured without preliminary preparation of any elaborate reports regarding them. A number of subjects of this kind were mentioned in an editorial which appeared in the *Railway Age* last week.

For some years now the mechanical conventions have been becoming "off again on again" affairs. Sometimes one reason for not holding a convention has been offered and sometimes another. Meantime, the conventions of other important railway technical associations have been held regularly. The American Railway Engineering Association has had its convention in Chicago in March of every year and every year the attendance at and interest in its sessions grew greater. The Railway Fuel Association has regularly held successful meetings. The Traveling Engineers' Association within the last two weeks has held a successful convention regardless of locomotive conditions resulting from the shop employees' strike.

Undoubtedly one of the reasons why for the third time in seven years it has been decided not to hold the regular mechanical convention is that for some years the conventions have been held at Atlantic City and the suspicion has spread abroad that the expenditures in connection with the exhibit and entertainment there were excessive and that the mechanical officers in attendance devoted too much time to diversion and not enough time to work. Everybody in the railroad business within recent years has grown much afraid of doing anything that might cause suspicion or criticism by the Interstate Commerce Commission or the public. It is also undeniable that the reports, papers and discussion at the convention of the Mechanical Division have deteriorated within recent years.

Whether or not it is due to the connection it has established with the American Railway Association, it is a fact that the vitality and initiative which formerly characterized the Master Car Builders' Association and the Master Mechanics' Association have been largely lost.

The work of the large technical associations of the railways of the United States has contributed enormously toward promoting the improvement of practices along all lines and securing the uniformity and standardization where needed, which has enabled our railways to become the most efficient in the world. Never in history was there a time when profound study, interchanges of experience and opinion, and concerted action regarding railway mechanical problems were more needed than now. Six years ago the cost of maintenance of equipment was less than $600,000,000. In 1921, a year of business depression when every possible

economy was practiced, the cost of maintenance of equipment was over $1,250,000,000. The mechanical officers are charged with the direct responsibility of making this vast expenditure efficiently and economically. They also have a very large responsibility with respect to capital expenditures for new equipment which amount to hundreds of millions of dollars a year.

The welfare of the railroads imperatively demands that there shall be some organization of the higher mechanical officers which constantly will study, broadly, profoundly, and constructively—the problems common to all railroads, affecting the design, construction, maintenance and operation of locomotives, cars and shops. If the Mechanical Division of the American Railway Association ceases to do this, as it is ceasing to do it, it will be necessary to leave the work undone or organize some other association to do it. Railway executives in testimony before the Interstate Commerce Commission and Congressional committees have repeatedly within recent years cited the existence and work of the large railway technical organizations as evidence of the constant efforts being made by the railways as a whole to increase the efficiency and economy of operation. Can they afford to allow a condition to develop which will make it necessary for them to tell congressional committees and the Interstate Commerce Commission in the future that with respect to mechanical problems this work on behalf of the railways as a whole is rapidly declining or has virtually ceased?

The initiative in realizing the work of the Mechanical Division should come from the leaders among the railway mechanical officers. It cannot be shown too soon. There is yet time to broaden the scope of the "business meeting" of the Mechanical Division which it has been decided to hold into a meeting at which there will be papers and discussions in addition to the reports of committees such as those on car construction and the rules of interchange which will convert it into a convention which will be highly valuable even though it lasts only a few days. The Mechanical Division will be derelict in its duties to the railroads if it fails to prepare and present at the meeting next year papers dealing with technical, economic and human problems that would justify holding a convention in a far greater emergency than the one which the railroads are now facing.

The National Election and the Railways

IT WILL BE VERY difficult for railway officers to get much comfort from the returns of the recent national elections. Among the public men who voted for the Transportation Act and favored intelligent regulation of railroads who were defeated for re-election were Senator Freylinghuysen of New Jersey, Senator Pomerene of Ohio, Senator Townsend of Michigan, Senator Kellogg of Minnesota and Senator Hitchcock of Nebraska. Two of these senators are Democrats and three Republicans. Three of them, Messrs. Pomerene, Townsend and Kellogg, are members of the Senate Committee on Interstate Commerce. Most of them owed their defeats partly or even largely to their part in helping pass the Transportation Act and their subsequent defense of it.

On the other hand, almost every candidate for senator in the middle western and western states who attacked the Transportation Act in his campaign speeches was elected. Senator La Follette was triumphantly re-elected from Wisconsin. The new senator from Minnesota was elected by a combination of radical farmers and workingmen. The new senator from North Dakota was the candidate of the Non-Partisan League. Iowa's new "republican" senator, Smith W. Brookhart, has long been an advocate of government ownership of railroads and attacked the Transportation Act in his campaign with the most mendacious misrepresentations. Mr. Howell, the new senator-elect from Nebraska, was as mendacious and virulent in his attacks on the Transportation Act and the railways as Brookhart.

The result of the election, in the western states at least, is the expression of a great change of sentiment regarding railway matters within the last three years. Three years ago the western farmers were disgusted with the results of government operation and favored the return of the railways to private operation under a policy of regulation which would enable them to earn reasonable net returns and adequately develop their properties. Railway rates were advanced in 1920 because if they had not been every railroad in the country would have been bankrupted. The prices of farm products began at almost the same time to decline rapidly. The farmers began to suffer severely because the prices of the things they had to sell declined much more than the prices of the things they had to buy. Immediately a host of demagogues sprang up and began to tell the farmers that their troubles were mainly due to high freight rates and that the high freight rates were mainly due to the Transportation Act. They represented that the Transportation Act "guaranteed" the railways a return of 6 per cent, and implied that the railways were getting this while the farmers were suffering great losses.

If ever there was a time in the history of the railways when their officers would have been justified in denouncing and refuting misrepresentations of this kind, and taking advantage of every opportunity and every available means for presenting the facts about the railroad situation, this was the time. For railway officers to denounce and refute misrepresentations regarding the railways is not to go into politics. It is as much the duty of railway officers as *railway officers* to defend the railways from unjust attacks, regardless of who makes them, as to maintain the track or run the trains. Here and there a few replies were made to these misrepresentations, but in most cases they were allowed to go unrefuted and even unchallenged. Most farmers believed them because they often heard them and seldom or never heard them denied. In consequence La Follette, Brookhart, Howell and the rest of their kind hung the hide of the railroads on their political fences in every community where they spoke and will now take it to Washington for further exhibition and perforation. A great industry which will not defend itself in the court of public opinion is more

likely to be profitable in the long run to demagogues than to those who invest their money in it.

Most of the business men of the country now understand the railroad problem, and are willing to cooperate in solving it. The farmers are being misled regarding it, and in the long run they will determine what kind of railway regulation will prevail. Until within recent years the meat packing industry divided with the railways the attentions of demagogues who were seeking the favor and votes of western farmers. The head of a large organization of farmers recently made in public the statement that there was no longer any hostility among the farmers toward the packers, but on the contrary a feeling of friendliness. How was this enmity changed to friendliness? George F. Swift, Jr., chairman of the packing industry's "Committee on Public Relations," recently made the following statement:

"Doubtless there was something to criticise. There generally is in every industry and in every individual. But there was also much to praise. Unfortunately, however, the industry did not tell its story. But the critics of the industry told theirs. Nor did these critics confine themselves to facts. They created an atmosphere of slander; they propagated a swarm of downright untruths—untruths alleging conditions which, were they true, would antagonize any man of common sense and inflame any man of decent feeling. Perhaps packers of those days were too confident that the admirable, efficient service they were rendering would be appreciated and that it would protect their businesses from slander.

"By bitter experience, meat packers have learned the necessity and value of constantly interpreting their industry and its services to the public. Today the industry enjoys a higher standing. Its cheap, efficient service is better understood. Meat packers are more highly regarded and meat products are being re-appraised with respect to healthfulness and high food value."

The packers told their story over and over again in public addresses, newspaper interviews and especially by extensive public relations advertising in newspapers, magazines and farm papers. The Standard Oil Company also has carried on an extensive campaign of public relations advertising. So has the American Telephone & Telegraph Company. So have public utilities throughout the country. Every one of these concerns and industries has by these means greatly improved public sentiment regarding its affairs. The railways have told their story only in a fragmentary way and occasionally. They have never told it through all the channels available in all the ways and with the tireless persistency that it must be told if the public in general is ever to know the facts about railroad regulation and the railroad situation. In consequence, in half the states of the Union, demagogues still find that the surest road to public favor is to tell lies about the railways and advocate legislation for their destruction.

Unless the railroads as a whole, and most individual railways take more seriously their problem of public relations and make real efforts to solve it, they will in time, and in no very long time, make private ownership impossible and government ownership unavoidable.

Brand versus Analysis Buying of Tool Steel

Much of the material used by railroads can and should be purchased according to detailed specifications. Tool steel, however, is not in a class with this material. Attempts to purchase it on specifications based on chemical analysis have proved costly to the railroads and unsatisfactory from the point of view of shop men who used the steel. The final and conclusive test of any tool steel is its cutting capacity, of which it has been well said that 25 per cent depends on chemical analysis and 75 per cent on the experience, skill and care of the manufacturer. Chemical analysis cannot explain the difference in quality of tool steels any more than it can explain the difference between chemically identical diamond and graphite. The large number of tool steel brands, formerly causing so much confusion, has been reduced in the past few years to a comparatively few well-proportioned grades, with properties and qualities well known to shop men by brand name. It is obviously far better to purchase tool steel by brand of reliable manufacturers, holding them responsible for the quality and suitability of the steel, rather than attempt to dictate detailed specifications based on chemical analysis which plays such a small part in the final product. Tool steel is essentially different from structural steel which lends itself more readily to purchase by specification. Tool and structural steels have been aptly compared to a skilled engineer and a laborer. Both steels have similar characteristics as regards strength, fibre, and ability to stand up under varying conditions. The tool steel, however, has certain desirable qualities in excess of the structural steel, just as the engineer has knowledge in excess of the laborer. In tool steel these excess qualities are put there by the manufacturer and designated by some brand name. Metallurgists, heat treaters and chemists may eventually evolve a scientifically exact method of manufacturing tool steel according to specifications in which the results can be exactly predicted from the premises, but in the present state of the art, it is far better to purchase steel-making ability as indicated by brand names rather than attempt to write analysis specifications. Railroad men should also remember how excessively costly poor tool steel proves in the shops and not make the mistake of basing purchases on price rather than quality. In many cases one tool steel, affording only five per cent greater production than another brand, could profitably be purchased even if the price was 100 per cent greater.

The International Union of Railways

The recent formation at Paris of the International Union of Railways is one of the most encouraging developments which have taken place looking toward the restoration of pre-war transportation conditions in Europe. With the setting up of many new nations, especially in Central Europe, the lack of agreements for interchange of equipment and other reciprocal allowances has acted with the serious physical deterioration of the railways as an effectual barrier to any kind of efficiency in international trading. Petty jealousies and intense national feeling prevented the early solution of the problem. With the representatives of the railways meeting together, however, it seems that there is hope for an early restoration of the fairly satisfactory conditions of pre-war days. There is no reason, however, why the newly-formed union should not go much farther than the mere restoration of pre-war efficiency. The railways of Europe were never as closely related to each other as they could have been to their common advantage. Standardization of rolling stock to the extent necessary to permit of universal interchange, standardization of gages, simplification of accounting, avoidance of unnecessary delays for customs examinations—all these are goals

which the union may set before it. Russia, as might have been expected, was not represented in the founding of the International Union. One hears persistent rumors, however, of constantly improving conditions in that country and it may be expected that, before long, it too may join with the rest of Europe in the union. China and Japan belong already, but will not participate actively until the Trans-Siberian Railway is again functioning normally. The International Union of Railways is in a position to accomplish for the railways of Europe some of the results which the American Railway Association and its predecessors have accomplished for the railways of this continent. Consequently it deserves the hearty support of every railway and every nation within its sphere of influence.

Why Shippers Are Unfriendly

There can be no question but that railway executives honestly want to serve the public acceptably and cultivate a friendly feeling toward their roads. Unfortunately, however, with the rapid growth in size of organization, and also as a result of federal control, the morale of the employees in many cases has fallen to a dangerously low ebb. The public has noticed this in indifferent service on the part of the employees and has been constantly irritated by this indifference, which sometimes has bordered on discourtesy. Winthrop Martin, a shipper, tells frankly elsewhere in this issue of his disappointing experiences in dealing with the railroads. He also makes a unique and constructive suggestion, which either by itself, or in a modified form, seems well worth consideration. Fundamentally, of course, the trouble is that the railroads, as they have increased in size, have been notoriously deficient in properly selecting, training and promoting their employees and in training and coaching the foremen and subordinate officers. Fortunately, many of the roads are awakening to the necessity of giving more attention to these and other matters relating to the personnel. Mr. Martin's observations, of course, refer to a limited area; has he overstated the conditions as they exist generally throughout the country? Have our readers other constructive suggestions for remedying the difficulties outlined by Mr. Martin?

Net After Rents

There have now appeared in these columns three references to the use of the figure of "net railway operating income." This is the fourth. The two preceding notes have essayed to define the term and all three have been intended to emphasize its importance and to express a suggestion for its more general and more consistent use. Before going further into the discussion, however, it might be well to emphasize the fact that "net railway operating income" is "net after rents." This comment is rather necessary because of the confusion that may lie in distinguishing between the terms "railway operating income" and "net railway operating income." The former is a figure which has been in use a much longer time than the latter. Briefly it represents the net after the deduction of taxes and of the relatively unimportant item of "uncollectible railway revenues." "Net railway operating income," however, is an entirely different thing. It is after the deduction or addition, as the case may be, of net equipment rents and the net for joint facility rents, which is the reason it is sometimes called "net after rents." All this would seem extremely elemental and hardly worthy of such extended comment, but for the amount of confusion that exists when it comes to differentiating between "railway operating income" and "net railway operating income." One who understands that there is a sharp distinction is inclined to be discouraged somewhat because of the great number of occasions in which one of the figures is shown unwittingly in the place of the other or in which the designation of the figure that may be shown is such that it is impossible to determine which of the two it may be. It is disconcerting, further, to see in how many instances the railways in their own monthly reports and still more in their annual reports fail to show the figure of "net railway operating income" at all, but remain content with showing merely the older figure of "railway operating income." Railway accounting is now enough of a science so that there should be greater consistency about this feature. The figures should be carried down as far as to show the "net railway operating income" both in the annual reports and the monthly reports which the carriers send to the press. In summary, the figure is important enough to be given and to be given correctly under its proper designation.

Produce or Starve!

President Worthington of the Cincinnati, Indianapolis & Western has something to say on another page about the policies of organized labor as it exists on the railroads today. He directs attention to certain fundamental principles of economics and severely criticises organized labor for not recognizing them. It is important to note, however, that he speaks of organized labor "in the sense that we understand it today." His criticisms are quite likely to be misunderstood if this is not clearly kept in mind. Unquestionably, President Worthington is sympathetic with organized labor having the right motives and under wise leadership. Undoubtedly he would pay a high tribute to that type of organized labor which has remedied abuses in the past and has helped to secure a proper understanding as to the privileges and rights of the workman. Unfortunately, however, radicalism within the ranks of labor has caused the pendulum to swing to an extreme radical position. President Worthington's article indicates the necessity on the part of the railway managements for educating the workmen as to their responsibilities and in simple industrial economics.

The Early Bird

WHILE AT FIRST THOUGHT it may seem premature to suggest the consideration of next year's construction program at this time when the present season's work is not yet completed, several roads are already making detailed plans for their 1923 activities. This year has witnessed the gradual resumption of the improvement of existing facilities. On some roads the amount of work undertaken has even approached that of boom years. The heavy traffic with which the roads are now struggling has demonstrated the shortcomings of existing facilities very forcibly and it is to be hoped will soon begin to provide more net revenues from which improvements can be financed, so that the indications point to 1923 being an active year.

The railways have been out of the construction field so long that the organizations to which these activities have given rise in the past have disintegrated in large measure. Few roads have sufficient engineering forces to do other than the minimum amount of work and the experienced locating and construction engineers in their service are few in number. Even more serious is the lack of large contractors' construction organizations familiar with the requirements of railway work. Many of the railway contractors of former days have entered the field of highway construction, while others have gone out of business because of the lack of contracts from the railroads.

It is because of these conditions that the more alert roads are already working on detailed plans for next year. The

engineering department of one road has secured authorization for more than 20 million dollars' worth of improvements and is now preparing plans and specifications preliminary to calling for bids. Other roads are scarcely less active. By calling on contractors for bids on their projects soon these roads will not only be prepared for an early start next spring and secure the use of the facilities quickly, but they will also secure first call on the available contractors.

Whenever activities are resumed on the scale which the present inadequacies of railway facilities demand, there will be a shortage of experienced railway and contractors' organizations which will limit the amount of improvement work which can be completed economically and will lead to competition for service which cannot but add to its cost. The road which anticipates this condition and contracts its work early will be in the same favorable position as the railway which buys its materials in advance of its associates.

Senator Capper on the Railroad Situation

SENATOR ARTHUR CAPPER of Kansas is the leader of the farm bloc in Congress. He is also the wealthy publisher of numerous farm papers. He has done more within recent years to disseminate misinformation regarding railway matters among the farmers than any other man. The sentiment which has been engendered among the farmers by misrepresentations of the Transportation Act and of the facts about the railroad situation was the principal cause of the recent election from many states, especially in the west, of numerous senators and congressmen who advocate a policy of railway regulation which would be more unfair, restrictive and harmful than that which has been followed in the past.

The *Railway Age* recently published an editorial in which it criticized Senator Capper and others for disseminating misrepresentatives regarding railway matters among the farmers. Senator Capper on November 5 devoted a speech at Clearwater, Kansas, to replying to this editorial in the *Railway Age*. He published his speech in his various papers. He denied that he had misrepresented the railway situation, and then proceeded in this very same speech to make another series of wholly misleading statements.

The existing shortage of transportation is so great and serious as to constitute the strongest possible argument from the standpoint of the public welfare for a fair and constructive policy of railway regulation. With respect to this situation Senator Capper said: "As to the present car shortage, that is no new disease. We always have a car shortage with us at this time of year." What are the facts? There was a large car shortage in 1906 and 1907 at the end of a ten-year period during which the total freight handled by the railroads had increased 150 per cent. The railways were then making and for some years continued to make great efforts to so increase their facilities as to remedy this condition. The result was that in the eight years from 1908 to 1915, inclusive there never was a large car shortage except in the fall of 1912, and in six of the eight years there was no car shortage at all.

Meantime, however, because of restrictive regulation the expansion of the railways was rapidly declining, especially after the year 1910. In consequence, when the great increase of business came in 1916 there came a large car shortage which prevailed not only in the fall of each year, but which, except in the spring of 1919, was practically continuous throughout the five years 1916 to 1920 inclusive. Because of the decline of business there was no car shortage in 1921, but the revival of business in 1922 has brought much the largest car shortage ever reported. The largest net car shortage ever reported in any past year was on September 1, 1920, when it was 146,000 cars. The net car shortage reported on October 15, 1922, was 152,034; on October 23, 161,940; and on November 1, it was over 175,500 in spite of the fact that during the two immediately preceding weeks the railways moved more carloads of freight than ever before in the corresponding two weeks of any year in history.

The facts, then, are that during the eight years ending with 1915 there was only one large car shortage, while in six out of the seven years since then there have been large car shortages which have increased in size until we now have one which surpasses all previous records, and which grows larger with every report.

Another statement made by Senator Capper was as follows: "This autumn they (the railways) are doing the greatest business in their history at an increase of 78½ per cent a ton-mile for freight, and of nearly 66 per cent a mile for passengers." Most comparisons between present railway rates and prices are based on the rates and prices of 1913. The average railway rate per ton per mile is now only 57 per cent higher, and the average rate per passenger per mile only 50 per cent higher than in 1913.

Senator Capper also said: "Railway officials estimate that for the last five months of this year the Class I roads will earn a net operating income of $480,000,000. This will make a total of $900,000,000 for the year, compared with earnings of $615,000,000 for 1921. $900,000,000 net income equals 5 per cent on $18,000,000,000, the approximate property value of the roads." When Senator Capper said that railroad officials made any such estimate of net operating income for the last five months of this year he said what we believe to be untrue. The *Railway Age* has never seen any such estimate from any railway source, and if any railway official did make it he did not know what he was talking about. To earn in the last five months of the year the amount of net operating income mentioned by Senator Capper, the railways would have to earn an average of $96,000,000 a month. In August they earned only $52,580,000, or at the annual rate of 2.65 per cent on their valuation, and in September, only $58,428,000, or at the annual rate of 2.88 per cent on their valuation. In the first nine months of the year they earned ony $529,413,000 net operating income, or at the annual rate of 3.96 per cent on their valuation. The net operating income earned by the railways in August and September, 1922, was almost $67,000,000 less than in August and September, 1921, when they earned at the rate of only 4½ per cent.

This reduction in net return was due to the reduction of freight rates made on July 1, and to increases in operating expenses caused by the shop employees' strike and by advances in the price of coal. To make their net return for the entire year $900,000,000, the figure mentioned by Senator Capper, they would have to earn in October, November and December a net of $391,000,000. This would be approximately $90,000,000 more than they ever earned in these three months in any year in their history. There is not the remotest possibility that they will earn anywhere near this much and every well-informed man knows it. Any public man who, in the light of these facts, all of which were available when Senator Capper made his speech, would publicly make an estimate that the railways in 1922 will earn an average net return of 5 per cent shows a reckless disregard for facts and a reckless disregard for the effect that his statements are likely to have upon public sentiment, railroad regulation and the public welfare.

No class of people is losing more money now from inadequacy of transportation than the farmer. By minimizing the seriousness of this condition, misrepresenting its causes, and making misstatements adapted to promote the adoption of a policy of regulation which will intensify and prolong it, Senator Capper and other public men influential with the western farmers are doing all they can with respect to railway matters to make worse the bad economic conditions from which the farmers are suffering.

Letters to the Editor

[*The* RAILWAY AGE *welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about* 250 *words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.*]

Mechanical Department is Severely Indicted

NEW YORK

TO THE EDITOR:

The announcement on page 907 of your issue of November 11, 1922, that the Mechanical Division, A. R. A., convention has been called off for the year 1923, comes as a serious shock to those of us who are particularly interested in mechanical department affairs and developments. Were it not for the reliability of your publication one would be inclined to question the statement that the proposed convention at Atlantic City will be displaced by a business meeting of the Division, to be held at some other place at some time during the year. It seems almost inconceivable that the General Committee of the Mechanical Division could have so far lost its sense of responsibility to the members of the Division, as well as to the railroads at large, as to have taken action of this sort at a time when there was never greater need for a real convention.

What has happened to the mechanical department officers? Have they entirely lost their manhood? What will the executive officers think of this action? They have seen something in recent years of the vital necessity for having the equipment maintained in the best possible condition and they must have learned something of the seriousness of the labor problem in the mechanical department during the past summer. Will they stand patiently by and allow the mechanical officers, through a mistaken sense of loyalty, to stay at home next June when they might far better be gathered in convention, discussing some of these problems, exchanging experiences and educating themselves as to how they may serve their railroads to better advantage?

The time was that the mechanical men gathered in their M. M. and M. C. B. conventions, put over real progressive programs and were a vital force in improving and developing the mechanical department. Can this be said today? If not, why not? Surely the problems now are greater than they ever were before. You have pointed this out repeatedly in editorials and articles in the *Railway Age* during the past few years and yet your constructive suggestions have apparently made no impression. I cannot conceive why this is so. Many mechanical department officers have expressed themselves as being dissatisfied and disgusted with the narrow and inadequate programs which have been followed by recent conventions. They have admired you for your constructive suggestions. Someone seems to be blocking the game. Who is it?

Someone has said that the mechanical department officers have lost caste in recent years. Many people believe that if they pass up the next June convention they will lose the last shred of dignity. You made some excellent and practical suggestions in your editorial last week on "What Will the Mechanical Section Do?" The mechanical department can redeem itself if it will accept your challenge and develop a real program and hold a real convention next June. This does not mean that long-winded, exhaustive reports must be prepared, going into endless detail as to the size of bolts and screws, or limiting dimensions, etc. It does mean some real reports or *individual papers*, prepared by men who are doing things in the strenuous period through which we are passing, which can be discussed to advantage and can be mighty helpful to mechanical men at large. What will the answer be?

D. I. S. GUSTED

Give a Thought to the Flagman

CAMBRIDGE, Mass.

TO THE EDITOR:

Is the shadow of the possible false clear signal to be removed from the signal engineer's mind? Mr. Stevens, signal engineer of the Atchison, Topeka & Santa Fe, in the very interesting paper that he read at Chicago and which you printed on November 4, page 853, talks about the abolition of the flagman in a way that suggests that he really expects to accomplish something in that direction; but can he do it? Can the operating officers, who do not always comprehend all of the fine points of automatic signaling, be induced to put Rule 99 on the shelf?

At present, the flagging rule (including the torpedo rule) is needed because (1) the engineman of the following train may fail to observe a semaphore signal and (2) because the semaphore may be out of order and fail to give him notice of the presence of the train ahead. The automatic stop (as we have known it heretofore) proposes to settle the first point, and Mr. Stevens, apparently, proposes to elaborate the automatic stop (or cab signal) so as to settle the second one also. Just how, he does not explain. The crucial point is the track relay, which must open on the passage of each train and thereby cause the signal behind that train to change so as to indicate to the following train "Stop." Is the train-control specialist going to give us something more certain and more faultless than the track relay? At present, the track relay *is* liable not to open; being closed it does not protect the train; and the train, if stopped or much slackened, must depend for rear protection on the flagman.

Another thing; when you propose to abolish flagging, consider the flagman himself. If you adopt a signal system under which flagging is not required he becomes only a brakeman; or, perhaps, more strictly, a trainman. But if he is faithful and responsible, he still continues to have a general care over the rear end of the train, and his services as flagman may become necessary and important at any time if the automatic train-control apparatus should get out of order. It will be necessary to include in the rules some suitable instructions concerning what to do in case of such failure of apparatus. Therefore, to make it possible that the rear brakeman can be at all times clear in his mind as to the safety of his train from collision, it will be necessary not only that the automatic apparatus be in good order, performing its proper function, but that it give this brakeman *constant assurance that it is so.* The alert and thoroughly competent rear-end man desires this assurance at all times. He desires it today. If his train is stopped on a clear day a quarter mile ahead of a semaphore block signal with horizontal arm plainly within his view, he is satisfied (so far as visual signals are concerned) that his train is protected. He wants this assurance at all stages of his journey, though for most of the time he cannot have it. He most certainly ought to have it, if we are to do away with the rule requiring him to go back; and he ought also to have assurance of an efficient audible as well as visual protection.

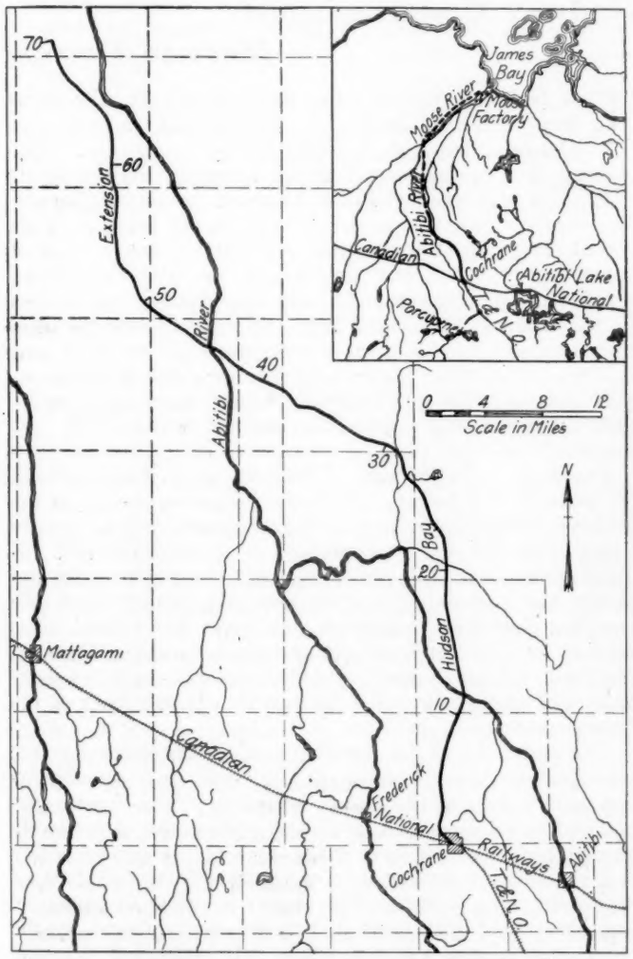
Mr. Stevens, presumably, does not claim at present to be doing anything beyond theorizing; but as he is an eminently practical engineer it will be interesting to know if he has considered these essential features.

JOHN C. HARVARD.

A New Project for a Railroad to Hudson Bay

Temiskaming & Northern Ontario Building 70-Mile Extension Toward Mouth of Moose River

A NEW CANADIAN railroad route to tidewater on Hudson bay is now being projected in the form of an extension of the Temiskaming & Northern Ontario from its junction with the National Transcontinetal at Cochrane, Ont., to James bay. The first 70 miles of this line is now under construction and surveys are being made for its extension to the estuary of the Moose river at the south end of James bay. The story of the Temiskaming & Northern Ontario



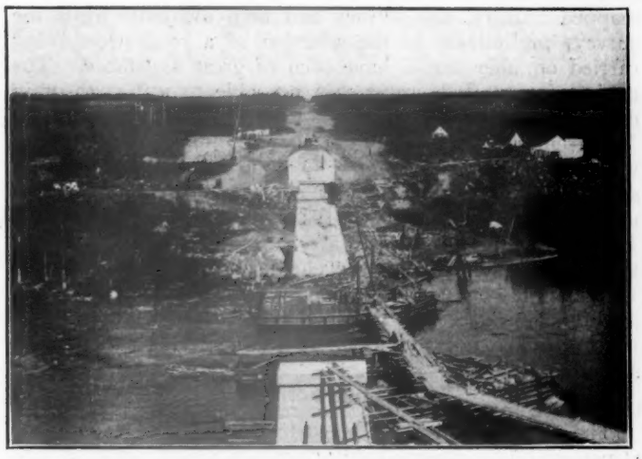
Location of the Temiskaming & Northern Ontario Extension

and the extension now under way presents an interesting side light on the effort toward the development of unpeopled areas of Canada through the construction of railways with the aid of provincial or dominion funds.

Less than 20 years ago the northern and largest part of the Province of Ontario, lying between Lake Huron and Lake Superior on the south and James bay on the north, was quite unsettled, and in a large part unexplored, except for a narrow strip of settlement along the shores of these lakes and along the main line of the Canadian Pacific. The belt of country lying immediately north of the lakes and traversed by the Canadian Pacific was rocky and presented a practically unsurmountable barrier to colonization. This belt extends as far north as the "height of land" between the Great Lakes and James bay, and the existence of a large area of clay land further north heavily timbered with spruce and poplar, was not generally known.

It was to tap this clay belt that the province commended the construction of a colonization railway in 1902, from North Bay on the main line of the Canadian Pacific to the north end of Lake Temiskaming. About two years later, the Dominion Government projected the National Transcontinental between Quebec and Winnipeg, and the Temiskaming & Northern Ontario was extended further north to meet the Transcontinental at Cochrane. This was completed in 1908, thus enabling the construction of the National Transcontinental to be carried on east to Quebec and west to Winnipeg.

It will be remembered that the National Transcontinental was to be leased to the Grand Trunk Pacific while the parent company, the Grand Trunk entered into an agreement with the Temiskaming & Northern Ontario Commission for running rights between North Bay and Cochrane, thus completing the connection between the Grand Trunk lines in



Construction Progress View of the Bridge at Mile 11.3

Ontario and the Grand Trunk Pacific lines in the west. War conditions following shortly after the completion of the National Transcontinental completely changed the railway situation in Canada, and, as is well known, the Grand Trunk lost a control of the Grand Trunk Pacific, which along with the Canadian Northern has been incorporated into the Canadian National and the running rights agreement referred to above has never become operative.

Although the Temiskaming & Northern Ontario has not become a real link in the transcontinental railway system as has been anticipated, it has served to develop the country it traverses. A vast area is rapidly being cleared and placed under cultivation, supplies of spruce and poplar and abundant water powers have led to the establishment of large pulp and paper mills, and silver and gold mining is being undertaken at camps such as Cobalt and Porcupine. The construction of the railway has moved the frontier of Ontario 250 miles farther north. The extension now under construction is designed to open up to settlement the area between the National Transcontinental and James bay.

Surveys disclosed that there would be no serious construction difficulties to determine the location of the extension, but that the real problem was to select a route that would best

serve to develop the intervening territory and reach a suitable terminal on tidewater. It was found that the mouth of the Moose river was the most desirable site for a harbor and that the terminal should be located on the west bank of the river opposite Moose Factory, an old Hudson Bay Company post on an island in an estuary of the river.

It is anticipated that the construction of a railway to Moose Factory will create considerable interest in James and Hudson bays, and that during the navigation season of five months, a considerable amount of coastwise shipping will be carried on. On the map it will be seen that in selecting a route for a railway from Cochrane to Moose Factory, the most direct line has not been followed, but it is believed that the route that has been adopted, will serve to open a larger area to settlement, and will better serve to promote the establishment of pulp and paper mills on the Moose river and its tributaries.

The Airplane for Surveys

The initial surveys were carried on by methods usually followed in Northern Canada, the only means of transportation being canoes in summer and toboggans and dog teams in winter. Subsequent to the completion of the exploratory surveys and the selection of a route the Laurentide Air Service, Limited, established an air station near Cochrane and the engineers of the Temiskaming & Northern Ontario have used sea planes to a slight extent. It has been their experience that they are valuable for exploratory surveys in unmapped country, and if they had been available while the surveys preliminary to the selection of a route were being carried on, they would have been of great assistance. The engineering staff, however was not able to utilize them in connection with detailed location surveys.

Currently with the location surveys, topographic surveys were made of the water powers on the Abitibi river. These surveys in part were necessary in order to determine clearances for structures crossing the Abitibi and its tributaries. In all cases these structures are being designed so that they will not restrict the future development of the water powers. Information obtained from the hydrographic surveys, was also used in connection with the investigation of the electrification of the railway, which is now receiving serious consideration.

Construction

The first 70 miles of this extension is now under construction. The general contractors are Grant Smith & Co. and McDonnell, Ltd., Vancouver, B. C. The clearing and grading has been sub-contracted to Noehren & Mannix and the concrete masonry to C. D. French & Co. The work is comparatively light, and the grading quantities, average about 14,000 cu. yd. per mile, while the masonry is relatively somewhat heavier, being about 15,000 cu. yd. in the 70 miles. The maximum gradients are 0.4 per cent southbound and 0.6 per cent northbound. The maximum curvature is four degrees. Embankments are 18 ft. and cuts 24 ft. in width. The location profile showed no solid rock, but a small quantity has been encountered in one or two of the deeper cuts. All structures are of permanent construction. The smaller culverts are reinforced concrete pipe, except in a few cases where by reason of greater facilities in transportation, corugated pipe was used. The larger culverts are of flat top reinforced concrete. The clay is of glacial origin and in the case of most structures, pile foundations are necessary. Spruce suitable for piling is generally found adjacent to the right-of-way. The larger creeks have worn deep ravines and these are crossed by steel trestles, the clay banks of the creeks not being sufficiently stable to permit the construction of large culverts or high abutments.

The contract for the steel bridge work has been awarded to The Hamilton Bridge Works Company, Ltd., Hamilton, Ont. The largest structure is the crossing of the Abitibi river at Mile 44.4, the principal span of which is a 220-foot deck truss. The structures are designed for Cooper's E-60 loading to Canadian Engineering Standards Specifications. The track is being laid with 80 lb. A. S. C. E. section rail, heat-treated angle bars and bolts. The ties are jack pine, untreated.

The Temiskaming & Northern Ontario is under the jurisdiction of a commission appointed by the provincial government, the chairman of the commission being George W. Lee of North Bay. The engineering staff includes S. B. Clement, chief engineer, North Bay, Ont., W. R. Maher, chief locating engineer, A. L. McDougall, division engineer in charge of construction, and A. A. McRoberts, assistant engineer in charge of design of structures.

Railway Commissioners Meet in Detroit

THE National Association of Railway and Utilities Commissioners held its thirty-fourth annual convention in Detroit, Mich, on November 14-17, inclusive. The meeting was opened on Tuesday morning, with a short address of welcome by James Couzens, mayor of Detroit. The mayor's talk was especially noteworthy because of its appeal for government ownership. He stated that municipal ownership of street railways is now on trial in Detroit, which has the largest municipally owned street car system in the country. He said that the railway and utilities commissioners had a great power entrusted to them and that was to see that proper service is provided at a reasonable cost; that the commissioners should insist upon public utilities eliminating graft, interlocking relationships, unreasonable salaries, etc.

President C. D. Jackson, of the association, followed with his address of welcome. He made a vigorous attack on the tendency toward centralization in government, and an equally strong plea for the perpetuation of local right and individualism as against socialism and communism. He deplored the national Transportation Act, which, with the amended Interstate Commerce Act, gives the federal commission control of railroad rates within a state when in conflict with interstate rates. He declared that state commissions will continue to resist the further encroachment of the federal power.

The remainder of the morning session was devoted to the reports of the committees on Public Ownership and Operation and Safety of Railroad Operation. The former denounced the Railroad Labor Board, stating that it is clearly apparent to all who have given the subject careful study that the existing dual system of control of the railroads of the country is a failure. The system is wrong in principle, and has proved disastrous in practice, as evidenced by the recent nation-wide railroad strike. It concluded that the only sound economical, logical, reasonable and practical solution to such a perilous situation is to abolish the Labor Board and transfer its function to the Interstate Commerce Commission; at the same time, enacting a law "with teeth in it," which will enable the Commission to enforce its decrees and orders.

The Committee on Safety, the chairman of which was C. C. McChord, of the Interstate Commerce Commission, stated that during the past year a number of serious accidents occurred on the railroads of the United States, which again forcibly calls attention to the necessity for extending the installation of accident preventive safety appliances. The greatest number of serious accidents, this committee claimed, may be attributed to the inherent weakness of the time-table and train order system of operation, necessarily involving the fallibility of the human element. The com-

mittee concluded that the need of automatic train control devices is now paramount, as is also the importance of more efficient power brakes.

Chairman McChord of the Interstate Commerce Commission addressed the commissioners on Tuesday afternoon, choosing as his topic Co-operation. He told of the history and outgrowth of railroad regulation and of the various acts and legal restrictions enacted since the first act regulating commerce was passed in 1887. Speaking of the Transportation Act, he stated that one of its most outstanding features is not generally appreciated and that is car service regulation. He strongly advocated much closer co-operation between the federal and state commissions and the carriers. He stated that the I. C. C. is ready and willing to do its part; that it has commenced a nation-wide investigation of the interstate express rates and charges and has invited all state commissions, through their Washington representatives, to co-operate—not only in respect to the interstate rates, but also in respect to all the intrastate rates. His concluding words were: "Unity of action can, of course, come only from unity of purpose, and that purpose must undeviatingly comprehend the good of the whole. We have laid the foundation. Our co-operative plan announces our purpose and marks the beginning of an epoch in railroad operation."

Committee reports and two round-table discussions took up the remaining time of the convention, which ended Friday. A report from the Committee on Motor Vehicle Transportation discussed the regulatory statutes recently enacted by some states in order to control this type of carrier. This committee stated that, if the railroads hope to retain short haul traffic, it will be necessary for them to make radical changes, both in service and equipment, although, the report continued, it should be the purpose of all regulatory bodies to co-ordinate the various transportation systems of the country in such manner as to render the best service to the public, with the least injury to established rail and boat transportation companies. The committee suggested that a gasoline tax is the most equitable method of requiring the users of highways to contribute in proportion to the use they make of same. Other committees, including that on railroad rates; car service and demurrage; express and other contract carriers by rail; valuation; grade crossing and trespassing; and statistics and accounts, presented their usual annual reports.

The following officers were elected for the ensuing year: D. N. Lewis of Iowa, president; A. Forward, Virginia, first vice-president; H. G. Taylor, Nebraska, second vice-president; J. B. Walker, New York, secretary, and J. H. Corbitt, Tennessee, assistant secretary.

Attendance at the convention was in excess of 100.

If We Do Not Produce We Shall Starve To Death

"Organized Labor" Unless Wisely Led and Conversant With Real Facts Will Bring About Disaster

By B. A. Worthington
President, Cincinnati, Indianapolis & Western

MUCH HAS BEEN SAID and much has been written about the prevailing unrest of labor, and nostrums galore have been offered by "students of human nature," college professors, and an endless array of self-seekers who modestly acknowledge they have found the secret; but when all of these remedies have been simmered down there is not much left that is tangible. In the simmering process, most of it passes off as gas.

It seems more than passing strange that everybody but those in closest touch and directly charged with the responsibilities of getting results from labor knows more about railroad labor troubles and their remedies than management itself knows. The twaddle that has been written about "inalienable rights," "right of strike," "seniority rights," "humanizing industry," "living wages," "labor not a commodity"—an endless list of theories and suggestions—serves principally to becloud the issue. In this impossible potpourri of fantastical and fanatical concoction, we find a financial seasoning—an aid to digestion possibly—in the form of "high finance," "over-capitalization," "valuation of railroad properties for rate-making purposes," "freight cars," "passenger rates," legislation codifying this and that, and restrictions denying this and that, unions defying everything and everybody—it seems that "labor" is running amuck and nobody knows what a halter is or where to find it.

Where Are We Headed For?

If we could only shake our minds free from the foolish obsessions that grip us, we might be able to see things clearly and to understand less hazily. If we do not understand our troubles in these days of ultra-refinement the first thing you know industry will have to submit to dangerous operations, whereas, in fact, it has only the belly-ache because it has been forced to swallow something that it did not want and cannot possibly digest—*and that is all there is to it!* The possibilities that lie right straight ahead of us, if we do not hasten back to common sense, are so terrible to consider that I will assert emphatically, if we could only realize what we are doing and where we are headed for, we would actually shiver in our boots.

Now to get the right view-point on "labor"—and "capital" too, if you please—we must necessarily find some tangible fact, some indisputable common ground to stand upon. We can go on theorizing and debating, and arguing and fighting about "inalienable rights," for instance. The fact is, whether we have any rights at all, alienable, inalienable or otherwise, if we do not *produce* we are going to *starve to death.* And the same thing about "physical valuation of railroad properties for rate making purposes." Suppose, for instance, this physical valuation would "warrant" a freight rate of ten cents, or ten dollars, when the going rate was one dollar. What are we going to do about it? If you lower the rates, the railroads cannot be maintained; and if you increase the rates, the farmers cannot market their produce. And all the way down the list, you might ask yourself seriously, "Well, what about it?" Suppose some of our ideas about "humanizing industry" do not fit into the general scheme of things—to be specific, while we are "humanizing" industry why not try the farming industry—it needs it worse than the railroads. No sanitary toilets (just think of it!), no ice water, no punitive or constructive overtime, no "standard day," no classification of work! Well, what about it?

Necessarily you have got to build on fact. If theory fits into fact, all right—it's a good theory; but you cannot pos-

sibly make fact fit into theory. Fact cannot be altered in any respect. It can be misunderstood and misapplied, and we can pursue the succession of resulting fact as far as we want to—until it becomes impracticable; then, if we have any common sense, we will trace back to see where we got off the right road, and start again from there. If composite American intellect is entitled to the high plane it presumes to occupy, it will never lose sight of the main fact.

The main fact that confronts us today in America is this—hard, substantial and unalterable; in the past 60 years (approximately) America has become a wonderful and powerful nation. Summarized and expressed in units that everybody will understand, bearing in mind always that progress, prosperity, power—everything desirable—has its roots in wealth, the following tabulation taken from authentic sources, is mightily impressive:

ACCUMULATED WEALTH OF AMERICA
(U. S. Bureau of Census)

1840	$7,135,780,000	1890	$65,037,091,000
1860	16,159,616,000	1900	88,517,307,000
1870	30,068,518,000	1904	107,104,212,000
1880	43,642,000,000	1914	204,393,000,000

Now here is fact—basic fact! It is unalterable. Whatever was done in that period, in the main fitted into our conditions well and the results that flowed therefrom were immensely satisfactory. Nothing like it in the history of the world! How proud we ought to feel! How anxiously we should strive to preserve the elements of these facts! Can anybody, in his sane mind, question that? Whether he questions it or not, the fact remains, unalterable—a succession of fact, confirming and endorsing the policies which governed our actions, and blessing us with a superabundance of everything that a sane people might desire!

Produce or Starve!

Are we so superficial, so insanely ambitious, so utterly given over to vain imaginings and selfish aspirations, as to suppose for a lone instant, that this succession of fact will continue indefinitely, or that the present status can be sustained, without continued production? Do we not realize, too, that high costs of production, limitation of output—everything that unionized labor (as we know it)—sponsors today, militates against production? That if we follow the vain theories that have been advanced so insistently and persistently that they have become "recognized" to a certain extent—the theory of ever increasing cost and ever decreasing production—we necessarily must fail in the end? And, at the rate we are traveling in pursuit of a worthless will-o-the-wisp, the end is not far removed?

During this prosperous period of America when, by sheer force of its wealth, it became a factor in the world's affairs, our railroads were built. The close relation that exists between operated railroad mileage and accumulated wealth of America, is easily understood. These two facts are linked together indisputably and inseparably. The antecedent fact upon which this accumulation of wealth has been possible, by which labor profited, directly and indirectly, as it had never profited before, is the fact of the railroads. The level of the "laboring classes" has been raised so high that the laboring man on the streets can scarcely be distinguished from the haughtiest financier. The "working conditions" of labor have been so improved that labor is reduced substantially to pressing a button or throwing a lever. Who made these improvements?

Underlying the physical fact of the railroads is capital! "Organized" capital, if you please! The flow of foreign capital into America was a fact that preceded the fact of the flood of humanity that spread over the continent. "Organized' capital preceded labor and organized it according to the needs of the people; following down this succession of fact we arrive at the financial facts quoted in this article. Are they satisfactory to you? Would you change them?

Another startling fact is the absolute absence of "organized labor" in this entire record of construction—"organized labor" in the sense that we understand it today! It is a remarkable fact—but easily understood when the principle of "organized labor" is understood. It has no place in a constructive program! It is not creative! It would not, could not, and did not fit into the general scheme of things—and we have every material reason to believe that it does not belong there today!

If you analyze "organized labor" as it is operating today, you will find that it is parasitical of origin, destructive in principle, and openly opposed to every attempt to increase production or to reduce the cost of production, both of which are urgently necessary.

For the purpose of this article, I do not believe it is necessary to follow succession of fact much farther. Suffice be it to state that we are at the crossroads, one broad flowery avenue of ease leading off to the beautiful sunset, the sweet Elysium of idle dreams; the other, a rough, hard road to travel possibly, where united effort will carry us to the promise of another day of inspiration which cannot fail for fact. Here, with our feet upon substantial ground always, we may reach the fruit of honest effort, and revel in the substantial benefactions of industry.

Without realizing the motive that compels men of wealth to labor on, even after reaching a point in years where they individually would be justified in retiring, few men are satisfied short of devoting every energy of their entire life to the common cause, and their trained business genius and mature judgment are invaluable to us. Their funds are invested in industry and profits are re-invested in industry whereby production is maintained and workers are profitably employed on a marvelously practical basis—not for additional profits which can mean nothing, but for the satisfactions that flow from voluntary acts that are helpful to the common cause. And so far as relates to the stabilizing effect and broad up-lifting influence upon industry, there is grave doubt whether more wholesome methods may be devised for the distribution of the nation's income. In all the substitutes that are offered, one vital defect is common—the inevitable lack of production that invariably follows the withdrawal of proper incentive.

What We Must Do

It seems to be a fact more or less generally accepted that "collective bargaining," within certain limits, is not to be condemned without a fair trial. There seems to be certain merit in co-operative endeavor, genuinely helpful; but when "collective bargaining" takes the form of unyielding demands, economically impossible, or when wages and working conditions are prescribed by irresponsible parties who have no personal interest in the particular industry or railroad, but who, notwithstanding, are vested with a terrible power of destruction, the organization becomes a thing to be feared—not loved and respected for its wholesome benefits.

What America must do, if it is to maintain its present status, is to get back to earth; that is, get a working basis of fact to build upon. We surely have had enough disturbance—murders, personal assaults, destruction of property and destruction of service—to teach us a real good lesson. The "right to strike" means no rights for anybody but strikers, and "freedom" seems to mean lawlessness. From beginning to end there is not a single fact to justify "organized labor," as we now know it.

The only "organized labor" that fits into our general scheme of things is that organization, brought together, trained, utilized and compensated by organized capital on the basis of economic production. Practically all of our ailments will disappear if we live sanely and naturally and do wholesome things; and what ailments do not disappear spontaneously, may be cured by common law administered by common sense.

A Shipper Comments on Railroad Morale

Conditions Are Deplorable and Drastic Measures Should Be Taken to Improve Them

By Winthrop Martin
San Francisco, Calif.

THE AMAZINGLY complicated problem of the American railways is under attack from widely differing angles. From within and for the employees, Mr. Plumb—of the once exciting and now thoroughly moribund "Plumb Plan"—had a fascinating scheme, whereby the investment of merely a few billions would show startling economies in millions. His program lies completely riddled.

The Association of Railway Executives growls and groans periodically, the substance of its plea being, that if the railroads are let alone, and regulation largely withdrawn, they can work their way out.

Then from a distance—usually too great—a host of skilled publicists have taken long-range shots aiming at some solution, but more often their work has been in the direction of diagnosis only.

There is still one angle of approach—a close-up—that I have not seen attacked, the angle of the average and constant railway customer.

Strangled by Red Tape

Living in a California village, a division point on the Santa Pacific, I ship and receive probably 200 cars of freight and travel perhaps 2,000 miles a year. From brakeman and freight clerk, yard master and local agent, to the executives of various departments, I am constantly in touch with what is, I suppose, a typical cross-section of railway management and operation. The preponderant idea in the minds of all these men, their guiding and deep ingrained principle, is "Cleave to the rules and damn the consequences." As a matter of fact, the consequences are thoroughly damned, and with them the railroads in the minds of the shippers.

And why? Not because the personnel is especially chosen for its lack of initiative, its stubbornness, or Mahatma Gandi disposition; but because they pass their official lives in fear and apprehension of a host of distant superiors, and a mass of rules and regulations. The freight tariffs alone, about 15 volumes of them, are so enormously complicated—with exceptions, cross-references, supplements—and so vague in their general terms that an average intelligence, after pawing them for an hour, longs to go out and end it all.

But of course the railways do their utmost to aid in solving and interpreting complicated tariff problems? Of course they do NOT. Consider a recent and still pending case of mine. I was planning the purchase of a carload of corn and corn products from Nebraska. This is the sort of long-haul business that the Santa Pacific craves, so they tell me. But now let us see how badly they want it. This was my first corn shipment from Nebraska and the tariff—a peculiarly intricate affair—was new both to my local agent and to me. Did or did not certain specific products fall into a certain group; if so, well and good, if not the addition of 10 sacks of chick feed would increase the rate $1.60 per ton on the entire carload.

Taking A Chance

Faced with this difficulty, I wrote the district freight agent a specific inquiry as to the rate on the products involved. The universal railway terror—of being by some possibility wrong—so obsessed him that he in turn wired my agent, referring us to the identical tariff over which we had so long and vainly pawed, and giving us not a word as to the interpretation we sought. Ensuing correspondence to Nebraska induced me to chance the shipment as planned, though the delay was costly; on its arrival my local agent assessed the freight on the basis of the lower tariff—and this in spite of the fact that finally the district agent did hand out *as his opinion* that the higher rate prevailed. Yet the incident may not be closed. Subject only to the statute of limitations, a ferreting auditor may drag the item from a mildewed file and an outraged law department may come roaring after me for the difference involved.

The same excessive passion for being on the safe side—at any cost in time and annoyance to the customer—prevails in the matter of refunds for the most obvious sort of overcharges. My last claim took some 90 days in being verified, checked, cross- and re-checked, audited and approved, and then staggered to my desk more dead than alive. And this in the face of the fact that a claim of the same simplicity in normal commercial practice takes from ten minutes to five days for complete adjustment.

The same disposition to avoid the giving out of definite, and therefore possibly compromising, information holds as to traffic rules. Ask the Santa Pacific by letter whether barley can be loaded at Yorktown, milled-in-transit at Hazleton, and consigned to Malta on the through freight rate. To us that seems a simple, definite, and reasonable inquiry. We see no trace of the TNT that undoubtedly lurks there. But the great company knows better. In reply will come a civil letter quoting the general rule on milling-in-transit privileges with not a vestige of an answer to the specific inquiry.

Now these isolated instances of my particular annoyances as a railroad customer are in no sense important, except as they are typical of a very general situation. From scores of shippers I have sought their attitude toward the roads; some are fighting mad, some bitter, some sadly resigned to what they have come to regard as an inevitably bad situation. Not one is even half-way satisfied with the service rendered, or has a reasonably friendly feeling toward the companies.

Lack of Morale

That is truly a serious situation and indicative of some fault far deeper-rooted than mere high freight rates. That fault is, as I see it, an all-pervasive rank-and-file lack of morale that could scarcely be worse if deliberately planned. By and large, railroad employees will fall into two groups, the youngsters eagerly struggling to get out of the game, and the older men plodding drearily along to the day of retirement and a pension. A deliberate effort to inculcate a standard of mediocrity, a dead level of featureless, errorless performance, could have produced no worse results.

Obviously it is no trick at all to draw up a damning indictment such as this, unless with it goes something concrete in the way of diagnosis, and something potentially possible in the way of remedy.

Chief Cause of Discontent

Promotion, or the lack of it on any equitable basis, is one of the chief causes of discontent in the ranks. Now this is a subject on which an outsider can, of necessity, have no detailed or accurate knowledge, except as the promotion policy

affects the great body of employees, which is after all the vital feature. Actually the system of promotion may be a most prefect structure, worked out in the greatest minutiæ, for the elevation of the worthy and the good of the service. But despite all that as an alluring possibility, the railroaders firmly believe that the grossest favoritism prevails in all promotions and that any practice of the grim virtues—loyalty, efficiency, initiative, hard work—merely makes them ridiculous. However much or little truth there may be in this deep conviction is entirely beside the mark. Essentially it is absolutely true so far as they are concerned, and the results in cumulative disloyalty must be staggering.

Take the quaint story of a certain high official and the humble agent at a branch line resort town. This official, whose functions appear largely social and decorative, is habitually hard up in spite of his most adequate salary, and borrowed in fifty and hundred dollar units a rather sizable sum from this agent. Repayment looming awkward, this accommodating chap was rewarded by promotion as agent to one of the most important cities on the entire system. Now that tale, which is universally current and accepted up and down the line, to me seems on the face of it ridiculous and absurd from every angle. Yet that does not in the least reduce its enormous morale-wrecking possibilities over hundreds of miles of the system where every youngster who enters the sevice is regaled with it.

The Poor Agent

Then there is the system of centralization and departmentalization carried to such an extreme that the rank-and-file are removed from all personal contact with their superiors, and contact is made solely by voluminous and formal interdepartmental correspondence. An agent recently gave me a list of 13 chiefs to whom he was responsible for various sections of his work, to whom he reported, and who kept meticulous records of his errors. I am inexorably convinced that that is 12 too many. In theory, instruction, admonishment, and reproof originate by letters from these various department heads; in practice it seems invariably to come from some inexperienced clerk, who knows the rules with commendable accuracy, and who lacks any faint conception of the problems involved in rigid adherence to them in everyday routine. Examples on this score could be given in discouraging profusion, but why waste time on what seems to me the reasonably obvious proposition that such excessive centralization is stultifying to the initiative and ambition of the men who have to support it.

Recruiting for every branch of the service is the third of the major causes of cumulative morale-failure. Until the last 15 or 20 years, different phases of railway work have appealed variously but keenly to a host of youngsters out of school and college. There was real romance, variety, and opportunity in the field, so they thought, and they clamored for admittance. Now that is all in the past, and for reasons already enumerated. In appeal the service is scarcely on a par with routine federal and state employment. The potentially keen and able are seeking what they consider more attractive fields and the effect of this loss will be increasingly apparent as the older men in the service are replaced by the just risen generation.

Where is Help to Come From?

Now what, if anything, and within the limits of possibility, can the roads do about this situation? Obviously they cannot destroy the present huge unwieldy structure, however desirable that course might seem from the angle of pure theory. They will claim that along morale and personnel lines they are already doing an enormous deal, that they provide excellent hospital care for a trifling monthly assessment, that the pension system should prove a lure (it does—to the wrong type of man), that they issue an attractive monthly magazine to all employees filled with "inspirational topics" and "uplift" features. Yet all that is pitifully and even ludicrously inadequate in getting at the real trouble. This magazine is especially an example of all that it should not be. Handed down as pabulum from above, it is full of copy book maxims and urgings of contentment and a sweet optimism in whatever humble position an employee may find himself. Quite naturally, it is received resentfully and read, if at all, mockingly. If it were made a real service paper, actually for and largely by the force, open for suggestions, criticism, and controversial discussions, it would be a real asset in a few months.

The triple problem of promotion, centralization, and recruiting is so widespread and probes so deep into railway management that I doubt if there is any real hope for worth-while relief entirely from within. Rail executives have been in their narrow harnesses for so long and subjected to the "reign of rule" so assiduously that any hope of their wrecking their—to them—perfected structure from within is dim indeed.

In a recent talk with a rail chief well up on the steps of the throne, he was vehemently thankful that he now labored under federal and state commission control, that the evil days of freedom and responsibility were gone forever. This is certainly no place to discuss the merits of government control, but that a rail executive should rejoice to sit under a rule imposed from without is dismally significant. No; help is not likely to come from within alone.

A Constructive Suggestion

But is the following plan, or some modification thereof, so absurd or unworkable on the face of it, that it is unworthy of a trial?

First: Select with infinite care and a seeing eye, 10 men between 30 and 50 years of age, who are reasonably successful in their present work, who are open-minded, thoroughly practical, chosen from widely varying environments, in no sense "experts" or hobby-riders, and above all skilled in the handling of men. That does not seem an impossible task.

Second: Send these men out individually and without contact with each other, giving them no program and no instructions beyond absolute freedom in investigating with a free hand every phase of railroad operation from cellar to roof-tree.

Third: Assemble this crew at the end of six months and throw them together for a ten-day discussion and exchange of information and ideas; and then shoot them out again for another six months on the road.

Finally: Bring them together once more in a jury-room session, holding them until they submit majority and minority reports on improvements in operation, morale, and service to customers. The whole affair would be on a simple and informal basis with no solemn nonsense of testimony and hearings, and no possible grooves into which a jury might slip.

These reports should be of infinite interest and value. They should provide an impartial, intimate, and commonsense survey of the entire situation that would be of enormous value to the rail executives.

From that point on, the cure of necessity must come from within. Mr. Ford has found it possible and desirable to purchase a road *in toto*, to inflict on it all his favorite hobbies and fancies and then so to juggle its traffic and so to feed it freight that it will show a specious profit. The rail executives might easily enough, if the reward loomed large, likewise select a road to be a laboratory and field experiment station on which to practice the procedure outlined by the jury of ten. Certainly the situation is at present so desperate that heroic measures are more than necessary—they are vitally imperative.

The Truth About the Transportation Act

"It Is a Moral and Economic Crime to Assert That Railways Were Over-valued by Seven or Eight Billion Dollars"

By A. B. Cummins

United States Senator from Iowa; Chairman of the Senate Committee on Interstate Commerce

[*Editor's Note.—The Transportation Act was the target for the most false and misleading attacks by many western politicians in the recent political campaign, and it will be the object of similar attacks in Congress after it meets. Senator Cummins, who was one of the principal authors of the act, took little part in the campaign, but delivered one of the ablest addresses in defense of the law at Des Moines on October 30 that has ever been made. Most of his address is reproduced below, because the Transportation Act will be the subject of much discussion and controversy in the months immediately ahead.*]

THE REGULATION by the government of the United States of our railway transportation never has been and I sincerely hope never will be a partisan subject. It is purely an economic problem and with respect to it every man and woman has an unquestioned right to hold and express an individual opinion without regard to party declarations or party affiliations.

I am submitting my views to the people of Iowa upon the subject because I represent them in part in the Senate of the United States and was responsible in a measure for the passage of the Act, and because the regulation of our industries, including railways, will, in my judgment, be the chief matter for consideration in the next session of Congress.

Whatever indignation I may feel respecting the flagrant misrepresentations with respect to the legislation under consideration will not influence me in the least degree in this discussion. I intend to treat the subject from an economic standpoint and from that standpoint alone.

The briefest sort of outline of the physical character of our railway system on the first of January, 1918, will be helpful in understanding the difficulties with which we had to deal in preparing the legislation of 1920.

When the government, in the last days of December, 1917, assumed the control and the operation of the railways, we had substantially 265,000 miles of main-track road. It had been constructed practically without any supervision on the part of the government. It was owned by substantially 900 separate corporations. Some of it was prosperous, some of it bankrupt, some of it in high state of development, some of it poorly built, poorly equipped, and enormously overburdened with capital obligations, but practically all of it absolutely necessary for the tremendous traffic of the country, and to meet the needs of the several communities of the United States. During the first six months of the year 1918 the government returned to their respective owners something like 30,000 miles of this property, consisting mainly of what are ordinarily known as the short-lines.

Federal Control of Railways

Under the Federal Control Act of 1918, the President was authorized to contract for compensation for the use of the property so taken over and retained. The standard fixed for compensation was the average net operating income of the particular road for the three preceding fiscal years. This standard gave to some of the roads, in my judgment, a great deal more than they were entitled, and to some less than they were entitled.

The government operated these roads for twenty-six months; it more than doubled wages and increased the rates 25 per centum. Its net loss for the entire period, assuming that settlements yet to be made are made upon the same basis as those already made, *was at the rate of about* $45,000,000 *per month.* The law provided and the agreements stipulated to return the roads to their owners at the end of federal control in as good condition as they were when taken over on the 1st of January, 1918.

It may be interesting to note that in settlements already made the government has paid, for under maintenance during federal control, $125,428,809—and if future settlements are made on the same basis it will pay $97,167,663 more, making a total of $222,596,472 on this account.

In 1919 the President notified Congress that he would surrender the roads on the 1st of January, 1920, but later modified his notification extending the time to March 1, 1920. It then became the duty of Congress to enact such legislation as was necessary, first, to wind up the affairs of the United States Railroad Administration, and, second, as would enable the owners of these properties to give to the people of the country the transportation service which their business imperatively demanded.

It will be remembered that the railroads were being returned to their owners with an average monthly deficit of substantially $45,000,000 per month. And, also, that for six months before the return application had been pending before the Director General for a further increase of wages amounting in the aggregate to $800,000,000 per year. It was well known that all or a large part of this increase would be granted, and in fact when the applications came to be heard by the United States Railroad Labor Board increases in wages were granted, on the 20th of July, 1920, amounting in round numbers to $650,000,000 per year. It is well to recall at this point that when the government took over the railroads it took over all their cash balances.

Under these conditions Congress continued what is known as the standard contract for six months; and until September 1, 1920, the government has paid or will pay to the railroads which applied for it in apt time, the compensation which was paid during the twenty-six months prior to March 1, 1920. It was also agreed by everyone that the railroads would be compelled to borrow immediately immense sums of money to rehabilitate their several properties, for while the government maintained some of them in reasonably fair condition many of them had been neglected and the equipment especially required the most extensive repairs. We all knew that the credit of even the soundest companies had been seriously impaired, and that it would be impossible for the best of them to borrow money in the immediate future at less than 7 per cent.

This is an outline of the situation, and to meet it and do all that could be done to make it reasonably certain that the railroads would continue to render the service upon which the welfare of the United States absolutely depended, Congress passed the Transportation Act.

I refrain from further discussion of the infinite details of this important measure and proceed directly to the consideration of those parts of the Act which affect freight and passenger rates, only asking you to bear in mind that if rates

had not been increased the railroads as a whole would have incurred after the 1st of September, 1920, for a time at least, a monthly deficit of $100,000,000 per month, and this upon the assumption that nothing had been expended for extraordinary rehabilitation. *If additional revenues had not been provided every railroad in the United States would have been in the hands of a receiver before the 1st of January, 1921, and our system of transportation would have been practically destroyed.* It is, I think, generally admitted that many of the advocates of the government ownership and operation of these utilities, opposed the Transportation Act hoping that the continuance of existing conditions would bring about that result, and I agree that it would have done so.

It is not my intention to inquire into the desirability or wisdom of government ownership and operation. I limit my comment upon that subject to just one remark. It is this: *That if we are to have public ownership of the railroads it ought not to be effected by first physically destroying the efficiency of the facilities of transportation.* If there is to be a change in our policy in that respect it can be and ought to be accomplished through constitutional methods, and without subjecting the people to the almost infinite loss that they would suffer if deprived for any considerable period of adequate means of transportation.

The Increase in Freight Rates

I approach now the specific objections which many people and particularly many powerful agricultural organizations have made and are making against the Transportation Act. It is claimed that the Act is the direct cause of the high freight rates which were established on the 26th day of August, 1920, and which have been and are so burdensome upon industry. I recognize the hardships which the farmers have suffered, and it is not difficult for me to understand their attitude. For reasons which are not pertinent to this discussion their productions went down in 1920 to pre-war levels or below, and at the same time freight rates were increased to a higher level than ever before. This conjunction of two extraordinary events was the severest blow that ever fell upon any industry, and it is not strange that their efforts to escape the disaster commanded all their thought and energy, and it may be that their extreme trials clouded their judgment when they came to inquire into the cause of their misfortune.

In order that there shall be no obscurity about my position with respect to this matter I assert that *the high freight rates* which have oppressed all the people and the farmers particularly *are not due to the Transportation Act,* 1920, but *to other causes over which the government neither had nor has the least control.* I go further and assert that in all probability *freight rates would have been higher without the Act than under it.*

I ask now the most careful and unprejudiced attention to that part of the Transportation Act which it is claimed has had the effect of unduly, unreasonably, and unjustly increasing freight rates.

During the first two years of the operation of the Act, namely, until March 1, 1922, the Interstate Commerce Commission is directed to take as a fair return five and one-half per centum upon the aggregate value of the railroad property, and that, in its discretion, it was authorized to add one-half of one per centum to make provision in whole or in part for improvements, betterments, and equipment, which, according to the accounting system prescribed by the commission, are chargeable to capital account. This means, of course, that not more than five and one-half per centum could be raised for distribution either as interest upon bonds or dividends upon stock. It is to be observed, first, that this proviso of paragraph 3 of the section expired on the 1st of March, 1922, and is not in any manner responsible for the rates which now prevail. I do not, however, say this in apology for it. It is absolutely sound economically. *It is in no sense a guarantee.* It is simply a declaration by Congress that in its judgment a return of five and one-half per cent would meet the Constitutional requirement that private property shall not be taken for public use without just compensation.

The period immediately following the transition from government operation to private operation was chaotic, and it was believed that this rule of rate making would have the double effect of steadying the credit of the railroad systems which were in complete disorder, and at the same time bar the insistence upon the part of the railroads that in view of the high interest rates which they were compelled to pay and the reduced purchasing power of money when applied to both labor and material, for a higher rate of return. In my judgment it fulfilled both these purposes, and it enabled the railroads to render the service without which all business would have been paralyzed. I repeat that it is not a guarantee as at once must be admitted when it is remembered that *during the year* 1920 *the net operating income of all the roads was less than one-third of one per cent,* and during the year 1921 and the first two months of 1922 the net operating income of all the roads was substantially three and three-tenths per cent, and no one contends or has ever suggested that the government is under any obligation to make up the difference between the actual net earnings of the railroads and the five and one-half per cent.

With this statement for the period ending March 1, 1922, let us examine that part of the law which is permanent in its duration. The statute as now in force provides:

> "In the exercise of its power to prescribe just and reasonable rates the Commission shall initiate, modify, establish or adjust such rates so that the carriers as a whole (or as a whole in each of such rate groups or territories as the Commission may from time to time designate) will, under honest, efficient and economical management and reasonable expenditures for maintenance of way, structures and equipment earn an aggregate annual net railway operating income equal, as nearly as may be, to a fair return upon the aggregate value of the railway property of such carriers held for and used in the service of transportation: Provided, That the Commission shall have reasonable latitude to modify or adjust any particular rate which it may find to be unjust or unreasonable, and to prescribe different rates for different sections of the country."

In every respect save one the paragraph just quoted is the declaration of the Constitution as construed again and again by the Supreme Court. That court has many times announced that a rate or body of rates prescribed by a Congress, a legislature, or a commission which does not allow a fair return upon the value of the property which renders the service is confiscatory and unconstitutional. It has more than once set aside a body of rates which allowed a greater rate of return than the railroads have received since September 1, 1920.

It is quite impossible to perceive the justice of a criticism upon this part of the law for it is nothing more than an accurate repetition of the Constitution and the repeated decisions of the Supreme Court interpreting it. If the Congress had directed the Commission to do less than to adjust rates that would make a fair return, or if the Commission without direction had done less, the Act of Congress or the act of the Commission would have been in violation of plain duty and the clearest commands of the Constitution.

The only new thing or element in the paragraph last quoted is the authority given to the Commission to consider what rates will produce a fair return upon the value of the railroads as a whole or in groups instead of considering the railroads singly; and I assert without the least fear of successful contradiction that this authority tends to decrease rates rather than to increase them. More than 90 per cent of the transportation of the United States is competitive in its character, that is to say, that with respect to more than

90 per cent of the traffic the shipper has the choice between two or more railroads. It is apparent that for the welfare of the country substantially all our railroads must be sustained, and it has been the rule of the Interstate Commerce Commission for years to adjust rates upon competitive business accordingly. This necessary practice required rates that might, while giving to one competing railroad a meager return, give to another excessive profits. It must be manifest that if rates are fixed upon the basis of maintaining railroads which have a higher cost of producing transportation than some of its rivals the whole level of rates would be a great deal higher than if they are fixed upon the basis of maintaining the railroads as a whole.

It is this national or group principle that is introduced in the paragraph quoted, and it is this principle which in addition to the suggestion I have already made with regard to the rate of return, which sustains my assertion that freight rates would in all probability have been higher in its absence during the whole period since the Transportation Act was passed, than they have been.

Most people who think at all upon this subject agree that the reasoning which I have laid before you is absolutely sound, and very few people claim that the rate of return fixed in the statute for two years as a fair return, or the rate of return since the expiration of the two years fixed by the Interstate Commerce Commission (5¾ per cent) is too high; and *it would be difficult to find a man with a sane mind but who would claim that the rate of return actually received by the railroads is high enough to escape the condemnation of the Supreme Court, if the question had been submitted to that tribunal.* The critics of the law have practically abandoned that part of their contention and have fallen back upon two other provisions which I will now consider.

It is said that the cost of the maintenance and operation of the railroads since their return to the owners has been excessive, and if these expenditures had been reasonable in amount the net operating income would have been greatly increased. Upon this point the Committee on Interstate Commerce of the Senate, of which I am chairman, has taken an immense volume of testimony. A report is about to be made and I will not anticipate its findings.

If expenditures have been extravagant the fault is not to be attributed to the law. If the facts alleged were proven beyond controversy it would furnish no reason for a repeal or modification of the statute. The Transportation Act in the paragraph to which I have so often referred provides for such rates as "will, under honest, efficient and economical management and reasonable expenditures for maintenance of way, structures and equipment, earn," etc. If we cannot trust the Interstate Commerce Commission to perform diligently and faithfully its duties in this respect then our whole plan of regulation by the government is a failure.

Valuation of Railroad Property

Having a somewhat intimate knowledge of the work of the Commission I am prepared to say that it has done everything in this regard that it could have done. *Of all the many tribunals and departments of the government* charged with the protection of the people against wrong doing *there is no tribunal* or department *which labors more continuously or more intelligently than the Interstate Commerce Commission.* I take pleasure in commending it with all my heart, and while I am conscious that it has made mistakes, for no earthly tribunal is infallible, I venture to say it commands the respect and confidence of the people to a greater degree than any other governmental body administering the laws of the country. In any event, the criticism is not to be directed against the law and if there have been mistakes either of commission or omission in this respect they would have occurred in more serious form if the statute had not been enacted.

The last objection insofar as rates are concerned, involves a subject upon which there has been more misapprehension and more misrepresentation, sometimes intentional and sometimes unintentional, than upon any other, grows out of the statement, current throughout the state, that the Transportation Act validates seven or eight billions of dollars of watered capitalization, and compels the people to pay a return upon seven or eight billions of dollars in excess of the actual value of the railroad property. This charge is flagrantly and obviously untrue, but more honorable men and women have been deceived and misled by it than by any other part of the long continued campaign against the measure. The argument is, that even granting that the rate of return whether designated by Congress or designated by the Commission, when computed upon a value of $18,900,000,000, it becomes excessive, when computed upon a value of $12,000,000,000 the alleged market value of all railway stocks and bonds and that rates could be reduced even though the cost of maintenance and operation is not reduced. The charge is accepted by great multitudes of the people without reflection because they know that there have been vast amounts of railway stocks issued without any consideration. No one has insisted more vigorously than I have that this practice should come to an end, and finally in the Transportation Act it was brought to an end. Everybody knows also that beginning with the first railway construction, a very considerable amount of the funded or bonded indebtedness was issued without consideration, and I am glad to say that this vicious financing cannot occur under the Transportation Act. It is, however, a moral and economic crime to assert that because these things have been true that the railroad property of the United States which renders the service of transportation, taken as a whole, was over-valued by seven or eight billions of dollars by the Interstate Commerce Commission when it fixed the value for rate making purposes at $18,900,000,000.

If I cannot make this so plain that any intelligent human being can understand it I will forever despair of establishing the simplest problem in railway economics.

Let us first examine the provisions of the Transportation Act upon this subject. They are found in paragraph 4 of section 422, which added Section 15a to the Act to Regulate Commerce. I quote it:

"(4) For the purposes of this section, such aggregate value of the property of the carriers shall be determined by the Commission from time to time and as often as may be necessary. The Commission may utilize the results of its investigation under Section 19a of this Act, insofar as deemed by it available, and shall give due consideration to all the elements of value recognized by the law of the land for rate making purposes, and shall give to the property investment account of the carriers only that consideration which under such law it is entitled to in establishing values for rate making purposes. Whenever pursuant to Section 19a of this Act the value of the railway property of any carrier held for and used in the service of transportation has been finally ascertained, the value so ascertained shall be deemed by the Commission to be the value thereof for the purpose of determining such aggregate value."

Under this paragraph and in a proceeding properly instituted, known as Ex Parte 74, the Interstate Commerce Commission found, on the 26th of August, 1920, that the railroad property of the United States was, as a whole, of the value of $18,900,000,000. This value was found mainly, if not wholly, under an act passed in 1913, and which now constitutes Section 19a of the Act to Regulate Commerce. Senator Robert M. La Follette, of Wisconsin, was the author of the measure and it was proposed and passed for the sole purpose of giving to the Interstate Commerce Commission a basis upon which to fix rates. In 1920 the Commission had been engaged for seven years in making an inventory and assigning the values of both the real and personal property

of the railroads, and had substantially completed its task. It disregarded all stocks and bonds or other indebtedness and viewed the property just as it existed; in fact, the amount of stocks and bonds which any company had issued became absolutely immaterial. The Commission looked upon the railroads as tangible physical property, no matter from what source the money creating it had been derived. It appraised the property precisely as one would appraise his farm with the buildings upon it or a town lot with its improvements. If there had been $100,000,000,000 of stocks and bonds issued by the railroad companies it would have neither added to nor taken from the value of the property itself. The Supreme Court of the United States had definitely and finally laid down the rule of law for the ascertainment of the value of railroad property. It had declared in many cases that the value of personal property including all structures and improvements is the cost of reproduction less depreciation for age and use, and that the value of the real property or land was at least the value of similar areas of adjacent lands or lots with such additions as would represent the cost of acquiring the lands or lots for railway purposes. Proceeding in this way and in strict obedience to the Constitution and the decisions of the Supreme Court the Commission decided that the property was worth $18,900,000,000. I may not agree, in fact I do not agree, that railway companies should enjoy the benefits of what is known as unearned increment, but the Supreme Court has decided that under the Constitution they are entitled to the increased value of land brought about by general growth and development, and Congress is powerless to change that decision, for the value of property and the elements which enter into that value are judicial and not legislative questions.

The Supreme Court has held that if a right-of-way is donated to a railroad company by the government or by an individual the value of that property is to be considered in determining the value of the entire property of that company. This may seem to be unjust. I think it is unjust, but the Supreme Court says that the Constitution demands it, and as a law-abiding citizen and a law-abiding Senator I accept the conclusion. Property not used for transportation purposes is of course not included in the value upon which rates are based.

At the risk of repetition I venture to state this proposition in another form, because the thing that rankles in the hearts of the people of this state is the feeling induced by the grossest misrepresentation that they are asked to pay a return to the owners of railroad capitalization upon seven or eight billion dollars of watered stock and bonds. If this were true and if there had been any lawful way in which the burden could have been lifted, I agree that the Congress which passed the Transportation Act and every member who voted for it merits nothing but the severest condemnation. The only answer to the proposition is that it is not true, and men who make the statement, if they have studied the subject, are enemies of good government, and men who accept it without inquiry fail in their plain duty as citizens of the Republic.

The railroad property of the United States comprises 265,000 miles of main track road; it consists of right-of-way, land, road bed, bridges, side and second tracks, rails, ties, ballast, station houses, warehouses, elevators, roundhouses, shops, offices, elevated tracks, crossings, and scores of other structures necessary in the construction and operation of a railroad. It also consists of substantially 2,500,000 freight cars, hundreds of thousands of passenger, mail and express cars, 70,000 locomotives, and an infinite variety of other forms of equipment. What is all this property worth? Take any particular company; the property which it uses in rendering the public service is worth just the same in the law whether it has issued fifty millions or a hundred millions of capitalization. The Supreme Court has said that it is worth for rate making purposes what it would cost to reproduce it, less depreciation for obsolescence. If, tested by this standard, the property of all the railroads is worth more than the aggregate amount of stocks and bonds, the railroads as a whole are entitled to that additional value; if the property is worth less than the stocks and bonds that have been issued by the various corporations, the excess of capitalization does not add a penny to the value of the property which renders the public service.

Government Ownership

Suppose those who advocate government ownership should finally become a majority, and the government would undertake to acquire the title to all railroad property. There are two ways in which it could be done: First, to condemn the physical property, in which event the value would be ascertained in precisely the way which the Interstate Commerce Commission has pursued. It could, however, acquire all the stocks and bonds and thus become the owner. If the latter plan were adopted every lawyer knows that these securities would be valued upon the hypothesis that the several roads were, as against any restriction by the government, earning a fair return upon the value of the property ascertained as already indicated, so that the outcome would be substantially the same in either case. The only way in which this result can be avoided is to abolish the Constitution and the Supreme Court. I grant that if we reach the time when the people are willing to adopt the policy of confiscation after having removed these hindrances to that policy, the government can take the railroads with or without compensation, but until we reach that time it is absurd to insist that we can ascertain the value of railroads either by consulting the market value of their securities or by eliminating all the stocks that were ever issued without proper consideration and all the discount upon the bonds that were ever issued for less than par. Whatever you may think, or whatever I may think, with respect to the proper method of valuing such property may be dismissed, for the question has been permanently adjudicated.

I have now given you what seems to me to be the material facts from which you must draw your conclusions upon the proposition I announced in the beginning, and very confidently I submit that no thoughtful man who desires to reach an honest conclusion can do otherwise than acknowledge that the Transportation Act which has been so furiously assailed is not the cause of the high rates, whether freight or passenger, which now prevail.

Cause of High Rates

While it is not strictly pertinent to my present discussion the subject would not be complete if I were not to express my opinion with respect to the cause or causes of these rates. They are due wholly to the increased cost of maintaining and operating the railroads. The expenditures must be deducted from the gross revenues in order to reach the return contemplated by the statute, so that the higher the cost of maintenance and operation, the higher the rates must be. For the year 1920 the total operating revenues amounted to $6,255,417,245; for the same year the total cost of maintenance and operation, including taxes and uncollectible revenue, was $6,124,573,270. These expenditures consisted of maintenance of way and structures, $1,030,503,557; maintenance of equipment, $1,593,481,899; traffic, $73,797,532; transportation, $2,901,583,273; general, $174,102,954; all other expenditures (including uncollectible revenues of about $1,000,000), $238,103,863. For the year 1921 the same items are: Total operating revenues, $5,563,232,215; total expenditures for maintenance and operation, $4,835,593,114. To these expenditures there must be added for the year 1920 expenditures for equipment and joint facility rents, $54,692,311, and for the year 1921, $67,522,377.

These figures taken from the records of the Interstate Commerce Commission tell the whole story. Upon the same volume of business the cost of maintaining and operating a railroad was a great deal more than twice the cost of maintenance and operation in 1917, and the situation was not essentially changed in 1921. To this fact, and to this fact alone, must be attributed the high freight rates of which shippers so bitterly complain, and it should be here noted that the increase in rates beginning with government operation has been about 57 per cent, while the increase in the cost of labor and railroad supplies has been 100 per cent or more.

There have been some sharp criticisms upon the legitimacy of some of the expenditures for maintenance and operation since the roads were returned to their owners. I would like to discuss these things but it is impossible to do it at this time. I repeat that objections of this sort are objections not to the law, but to the administration of the law by the Interstate Commerce Commission. That commission has full authority to examine every item of expenditure and to reduce or altogether expunge any item which has been either exaggerated or is wrongfully inserted in the accounting. I may be permitted to add, however, that if every item which has been challenged in a long and exhaustive hearing before the committee of which I am chairman should be eliminated, or modified, the total expenditure would be reduced less than one per cent. All this means, of course, that the revenues of the railroads cannot be constitutionally lessened in any substantial degree until the railroads themselves are able to reduce their expenses or the government can compel a reduction and that is the matter to which the farmers should turn their attention rather than to assaults upon the Transportation Act.

Should Government Guarantee Farmers a Fixed Price?

One further phase of the controversy deserves some consideration. It has been said that if the government passes a law which provides that railroad rates must be so adjusted that they will yield a fair return upon the value of the railroad property, that the government should likewise make some provision that would insure a market price for farmers' products that would yield to the farmers a fair return upon the value of their property. The government has undertaken to fix the price of transportation and the Constitution says that the price must be so fixed that it will yield a fair return. It would greatly rejoice the railroad corporations if the Act to Regulate Commerce, including the Transportation Act, were repealed, and they be permitted to charge whatever they please, but I assume that there are very few people not connected with the railroads who would be willing to see this done.

I will not discuss the wisdom of putting the farmers of the country in the hands of the government to the same extent as the railroads are. My judgment is that nothing could be more disastrous to the agricultural interests, and so long as the farmers are at liberty to conduct their affairs in their own way there is, of course, no lawful basis for invoking the protection of that provision of the Constitution which forbids the taking of property for public use without just compensation. I am not unmindful of the fact that there are some powerful organizations advocating a movement for the transfer to the government of all industry and all business, but it is not my purpose at this time to enter upon the many hued doctrine of state socialism.

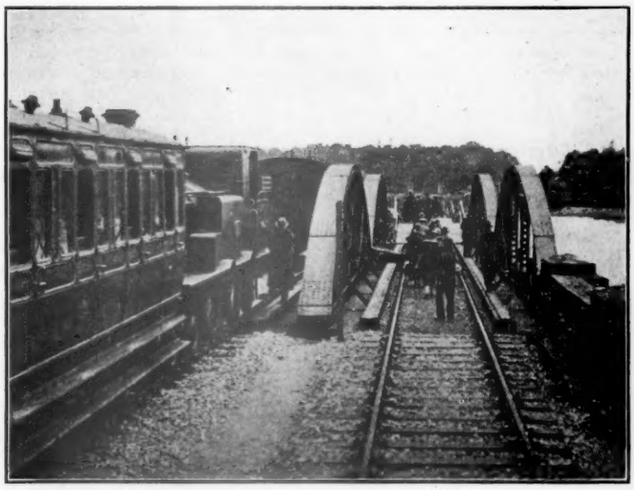
Fifteen pages of the Act cover the establishment of the United States Railroad Labor Board for the settlement of disputes between railroad companies and their employees. I understand perfectly that the railway unions insist upon a repeal of these sections of the Act, and they do so because they fear that the Labor Board will continue to reduce their wages, and that strikes are not as likely to be successful against the judgment of the board as they would be if there were no governmental tribunal to pass upon the justice of the disputes which from time to time arise. I think most of the railroads want the labor sections repealed, for obvious reasons, but it is inconceivable to me that the great body of the people who must in the end bear the expense of every strike or disturbance in transportation will lend their influence to the desires of these two selfishly interested parties. It may be that the Labor Board can be improved; but that we must have some tribunal to settle these disputes and do what we can toward preventing the interruption or paralysis of our transportation system is, I am sure, the judgment of the great majority of the people.

Section 439 gives to the Commission for the first time supervision of the issuance of railway stocks and bonds and it will prevent for all time the harmful speculation in these securities. It also forbids any person from holding an office in two railway corporations unless the Commission finds that neither public nor private interests will be injuriously affected.

I have mentioned but a few of the sections of which the Transportation Act is composed, but I have referred to enough of them to show how blind and destructive the demand for the repeal of the Act becomes when examined in the light of reason and when tested by the common interest.

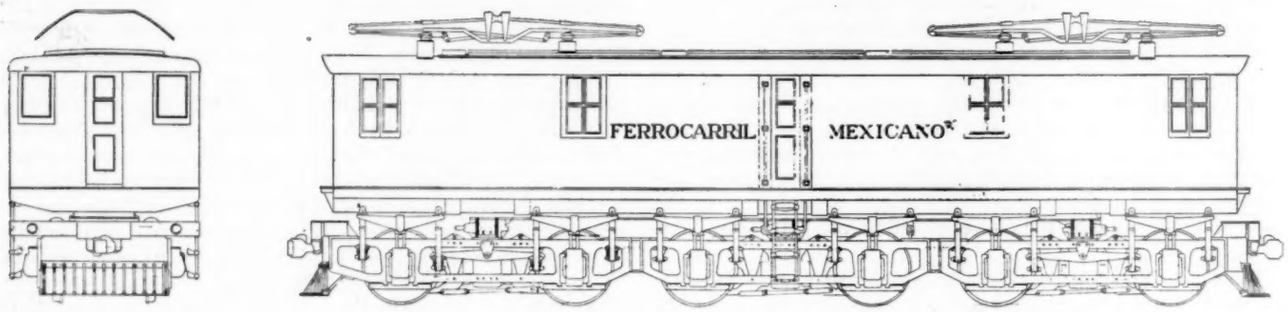
I close this discussion with the final comment that *when truth and reason resume their rightful sovereignty the people of Iowa and the country will clearly recognize that the promises now so lavishly made in denouncing the Transportation Act can be fulfilled only when the Constitution is trampled under foot, when the courts cease to perform their functions and when the United States is ready to walk in the footsteps of unfortunate, ill-fated Russia.*

GEORGE GEER, of Bozeman, Mont., 83 years old, has just resigned his position as locomotive engineman on the Northern Pacific after serving as fireman or engineman 54 years, and after 67 years in the railroad service altogether. Mr. Geer says that his eyes are as bright and his brain as clear as they were in 1854 but he thinks it time to avail himself of his privilege of going on to the pension list. He began as a water boy on a wood train on the Buffalo & Erie; was a fireman on the Michigan Central in 1857 and was on the Union Pacific in 1868. He began his service with the Northern Pacific in 1884.



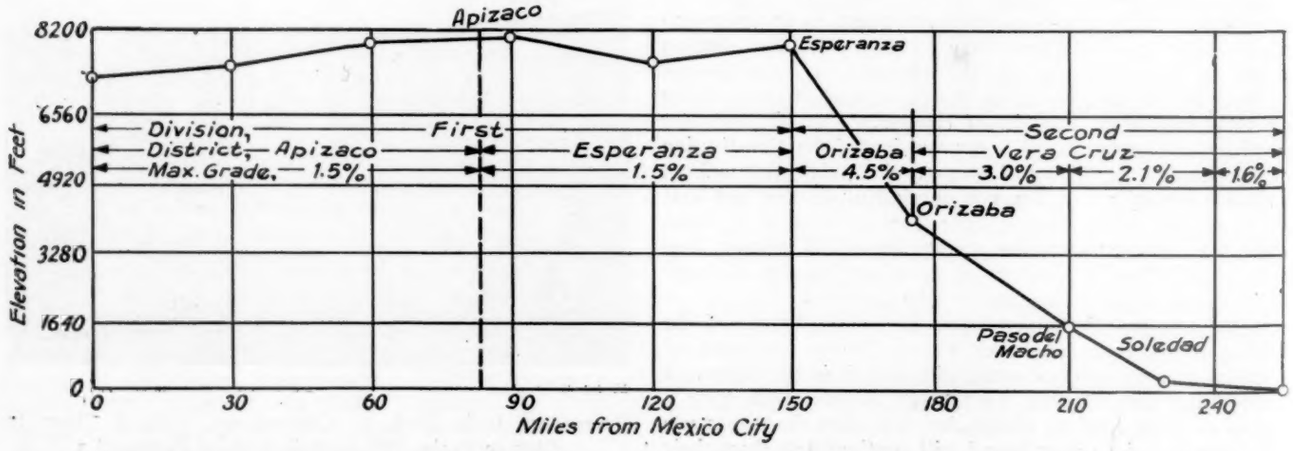
Kadel & Herbert

Passengers from Cork to Queenstown, Ireland, Have to Change Trains Where Rebels Have Damaged a Bridge by Dynamiting



End View and Side Elevation of 150-Ton, 3000-Volt Direct Current Type of Electric Locomotive to Be Put Into Service on the Mexican Railway

Map of the Mexican Railway. Initial Electrified Section Will Extend from Esperanza to Orizaba

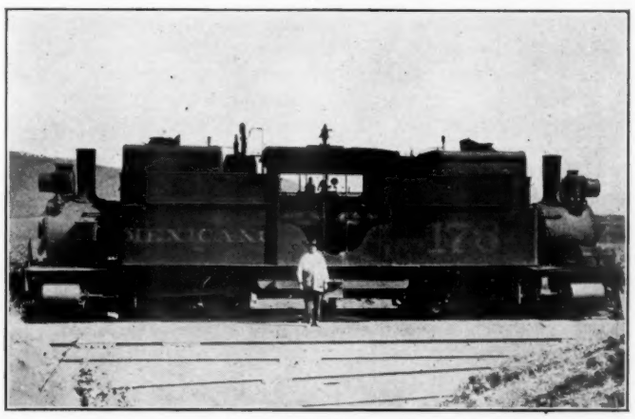


Profile, Showing Divisions and Districts

Mexican Railway to Electrify Thirty Miles of Main Line

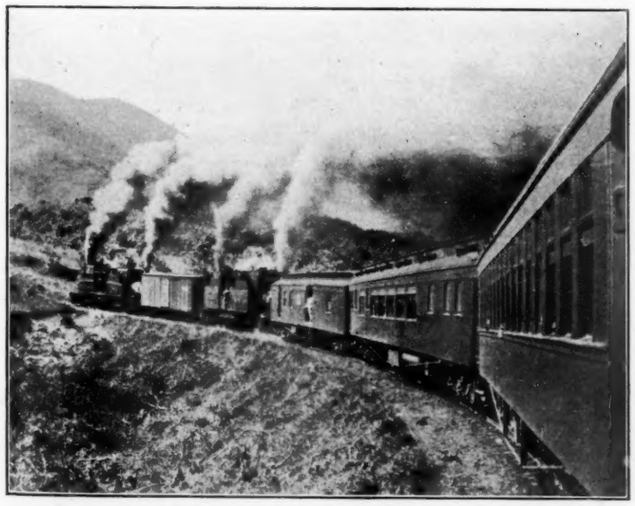
THE International General Electric Company has received an order from the Mexican Railway Company, Ltd., of Mexico City for the electrification of 30 miles of single track between Orizaba and Esperanza which is on the main line between Mexico City and Vera Cruz. The approximate cost of the electrification project will be between $2,000,000 and $2,500,000.

This is the first main line steam road electrification to be



Double-Ended, Oil-Burning Steam Locomotive Which Will Be Supplanted by Electric Motive Power

undertaken in Mexico and is on the oldest and one of the largest railways in the country. The compelling reasons for electrification were the heavy grades and increasing traffic. Indefinite postponement of the necessity for double tracking the road and a saving which will pay for the entire cost of electrification in five or six years is indicated. The system will be operated at 3,000-volt direct current, power to be supplied at this voltage by the Pueblo Tramway Light and



Passenger Train Hauled by Two Double-Ended Steam Locomotives Ascending Grade North of La Bota

Power Company, whose hydroelectric plant is five miles from Orizaba.

The International General Electric Company will supply ten 150-ton locomotives interchangeable for freight and passenger service, equipment for an automatic substation, the trolley overhead and feeder lines and fittings complete. It will also supervise the complete installation.

The electrification of this portion of the Mexican Railway is the beginning of the main line extensions which will follow as it becomes necessary to increase the capacity of the single track or the number of electric locomotives. The total route mileage of the Mexican Railway is 403 miles, rising from sea level at Vera Cruz to a maximum altitude of between 8,000 and 9,000 feet. Grades as steep as 5.25 per cent are encountered while the ruling grade on the electrified portion will be about 4.7 per cent.

R. B. A. Cautions Against Transportation Act Changes

THE RAILWAY BUSINESS ASSOCIATION at its annual meeting at the Hotel Commodore, New York, on November 9, adopted five resolutions which are given below. The first of these urged that no changes be made in the Transportation Act at this time. Others dealt with the stability of railway purchases, immigration and the appointment of the fact-finding commission for the coal industry; the fifth was an appreciation of the services of the late T. DeWitt Cuyler. Addresses of C. H. Markham, president of the Illinois Central and J. A. Emery, counsel of the National Association of Manufacturers, were reported in the *Railway Age* of November 11. The resolutions, verbatim, follow:

I

Prosperity is here. Let us make it last. Recovery in agriculture, industry and trade has its mainstay in railway buying. It was the replacement and addition of locomotives, cars, tracks, terminals and accessories which largely revived general business. Railway improvements must continue if the traffic is to be carried. Car shortages are upon us. October almost brought a new peak in car loadings. Shippers are confronted by congestion in freight, limit upon industry and sacrifice of farm products. The foundation of railway purchases is the confidence of railway managers and investors. For Congress to consider early amendments to the Transportation Act would open the door to assaults upon the policy which is designed to give the roads an opportunity to make sufficient earnings. To let it be clearly seen that no amendments of any kind are under serious consideration will leave all concerned free for the work of railway rehabilitation and preparation for the coming burden of traffic. We urge that Congress refrain at this time from all amendments to the Transportation Act.

II

We again emphasize the need of giving railway purchases greater stability. Railway improvements even if sufficient in the aggregate over a period of years would yield their fullest public benefit only if so planned as to relieve instead of aggravate general depressions. Greater stability would give steadier employment to industrial labor and a more constant domestic market to farm and mill products. It would promote adequacy in the replacement and production of facilities and economy also by resort to the credit market when rates are low and to the markets for labor and material when both are plentiful. Essential for a policy of planning ahead and adhering to plan is a clearer public and political understanding of the practical financial problem with which the railway managers and directors have to deal. We note with satisfaction an increasing interest in the subject and systematic study of it by agencies both governmental and volunteer.

III

We favor amendment of the immigration law to provide admission limited by quality of applicants instead of by their number. The present law was enacted at a time of serious domestic unemployment. That occasion has passed. Railroad improvements otherwise feasible and urgently needed are delayed by scarcity of unskilled labor and the execution by us of railway orders for material and appliances is impeded by the same cause, which pervades all industry. Sufficiency of common labor is essential to enlarging employment of skilled operatives and fundamental to general prosperity.

IV

We commend the President for appointing to the Coal Investigation Commission no miner or operator. In a body established by the public to inquire into problems of public service and to

appraise the practices of those engaged in such service the public interest is paramount and advocates speaking for these under inquiry should have no seats. The whole personnel should represent the public as such.

V

A heavy loss is suffered by the whole country in the untimely death of Thomas De Witt Cuyler. Discharging with great ability through an active life in large affairs the many professional, fiduciary and civic responsibilities of a strong citizen, he led the railway executives and performed a unique work in the critical period of remedial railway legislation and of development in administration of the new policy. Success in these vital and difficult processes required that the national railway system should have a representative voice; and in Mr. Cuyler was found a sagacious counsellor and a persuasive public spokesman. In gifts, in devotion to great duties and in character he filled a place among Americans who have served the republic well.

The membership of the association as of October 31 was reported to be 545, as compared with 241 on the same date in 1917—an increase of 79 per cent over the pre-war membership.

Government Report On Sulphur Springs Collision

THE INTERSTATE COMMERCE COMMISSION has issued a report dated October 10 and signed by W. P. Borland, chief of the Bureau of Safety, on a rear collision of passenger trains on the Missouri Pacific at Sulphur Springs, Mo., on August 5 when 34 persons were killed and 186 injured.

This collision was reported in the *Railway Age* of August 12 and 19; and the present document gives few additional details except a considerable number of quotations from the rules.

The conclusions at the end of the report include the following paragraphs:

This accident was caused by the failure of Engineman Glenn, of train No. 4, properly to observe and be governed by automatic block-signal indications; and by the failure of the crew of train No. 32 to protect the rear of their train against following trains, as required by rule, for which Flagman Boston, Conductor Long, and Engineman Gross are responsible.

The evidence points to the conclusion that Engineman Glenn was not complying with the rules relative to the observance of the caution indication of distant signals, but was relying entirely upon that of the home signals. The fact that his train was a fast train and naturally was given a clear track, and held a train order that train No. 1, another fast train, would wait at Wickes until 7:40 p. m. for him very likely had a tendency to lead him to the conclusion that the road would be clear.

In this instance had these rules [flagging rules] been complied with at Sulphur Springs alone it is doubtful, on account of the close proximity of the two trains, if the flagman would have had time to get back a sufficient distance to afford any substantial protection. However, had these rules been generally observed at all stations, including Riverside, which would have required the leaving of torpedoes, . . . it is quite likely that Engineman Glenn's attention would have been called to the fact that he was following another train closely, and he would have been more attentive to the signal indications. . . .

Flagman Boston's most important duty was to protect the rear of his train, yet according to his own statement he made no attempt to do so. . . . Conductor Long was in charge of the train and it was his duty to know that Flagman Boston was obeying the rules, yet it is clearly apparent that he knew Flagman Boston was not doing so with respect to flagging and that it was not customary for him to do so. For this negligence Conductor Long shares in an equal degree the responsibility. . . .

This accident still adds to the already appalling list of similar occurrences and but further emphasizes the necessity for the adoption of means which will automatically compel obedience to signal indications by taking the control of the train away from the engineman when for any reason obedience to block signals on his part is lacking. An adequate installation of such a device in this instance would have prevented this accident.

It appears that it is the practice for operators to copy only such portions of a train order as directly affect the trains for which they are being copied. This is a dangerous practice and contrary to the rules of the railroad company.

While the direct cause of this accident was the failure of the engineman, the underlying cause was lax enforcement of the operating rules, for which the supervising officials of the Missouri Pacific must bear the responsibility.

A rule which requires a train receiving a permissive signal indication to proceed with caution prepared to stop short of train or obstruction clearly requires some positive action on the part of an engineman when approaching or passing such signal and the failure to comply with such a rule is a matter which could easily have been checked up by supervising officials. The lax practice in flagging disclosed by this investigation is also a matter which could scarcely have escaped the attention of the officials. According to the statement of Flagman Boston, when officials were riding with them they made only a pretense of flagging. The Missouri Pacific Railway Co. should promptly take steps to secure proper obedience to its rules and regulations to prevent the recurrence of accidents of this character.

Engineman Glenn had been employed as an engineman since 1890; in December, 1908, he was discharged for responsibility in connection with an accident, being reinstated in March, 1910, since which time his record was very good.

THE SOUTHERN PACIFIC has reduced the freight claim payments on its lines since January 1, 1922, sixty per cent.

THE "RAILROAD BUILDING AND LOAN ASSOCIATION" has been formed by railroad men and others at Dallas, Texas, with L. P. Talley, a banker, as president of the association. Among the railroad men on the board of directors are M. L. Buckner, W. G. Crush, John F. Lehane, H. J. Sewell, E. E. Taylor and W. M. Whitenton.

Underwood & Underwood

The Greek Exodus from Thrace—Scene at Railway Station at Adrianople

Authority for Reduced Rates to Pacific Coast Denied

I. C. C. Interprets Amendments to Transportation Act— Must Foster Water Transportation

WASHINGTON, D. C.

A NEW CHAPTER in the history of transcontinental freight rates has been written by the Interstate Commerce Commission in its decision made public on November 11, denying most of the fourth section applications filed by the transcontinental lines in August, 1921, proposing to establish from and to the Pacific Coast terminals lower rates than are in effect to and from intermediate points on traffic having origin or destination in the defined territories lying, roughly speaking, east of the Rocky Mountains, to meet the low rates by steamship lines between the Atlantic and Gulf ports and Pacific ports. In this decision the commission interprets and gives force to the amendment to the fourth section made by the transportation act and particularly to Section 500 of that act, which declares the policy of Congress to "foster and preserve in full vigor both rail and water transportation." The commission thinks that the amendment prohibiting it from granting fourth section relief where the charge to and from the more distant point is not "reasonably compensatory" for the service performed was Congress's way of saying that it should follow a less liberal policy in dealing with departures from the long and short haul rule than had been followed in former years and it finds that the carriers have failed to make the necessary affirmative showing that losses of revenue would not result from the reductions they had proposed in Pacific terminal rates. The decision is also based in part on the theory that the region west of Pittsburgh would be accorded a preferential rate structure by the proposal of the railroads to blanket the rates from Pittsburgh to the Pacific from all points of origin from the Atlantic to the Missouri river or even westward while keeping in effect rates from eastern origins in the same territory to intermountain destinations graded roughly according to the respective length of the hauls.

Southern Pacific Reductions Allowed

While denying the general westbound application of the transcontinental carriers for reduced rates on various commodities to the Pacific Coast terminals, however, the commission allowed the proposed reductions on crude sulphur from Texas and Louisiana mines to Pacific Coast terminals on the ground that they are reasonably compensatory to the roads. It also approved the application of the Southern Pacific to establish reduced rates from California terminals to New York City by its rail and water line through Galveston on asphalt, beans, canned goods, dried fruit and rice, but with modification increasing the proposed rates by 5 cents per 100 pounds. The other applications denied were for authority to establish reduced rates on sisal and ixtle from El Paso and Gulf ports to Pacific terminals and green coffee from New York, New Orleans and Galveston to Pacific terminals. Commissioner Aitchison dissented in part from the decision of the majority and six other commissioners signed separate concurring opinions objecting to certain findings of the majority.

Departures from Long and Short Haul Rule Ended in 1918

On March 15, 1918, all departures from the long and short haul rule in westbound transcontinental rates were removed under the decisions of the commission finding that, due to the withdrawal of ships for use in the trans-Atlantic service, water competition between the Atlantic and Pacific ports was no longer a compelling force. The commission found that the maintenance of lower rates to the coast than to intermediate points unduly preferred the coast, and expressed the view that commodity rates in certain instances at least might be graded, but generally speaking, the railroads increased the rates to the terminals to the extent necessary to put them on a parity with the intermediate points, resulting in a blanket extending several hundred miles inland from the Pacific Coast. At the hearings on the applications filed in 1921 the carriers showed that the traffic destined to the Pacific Coast had been moving by water in heavy volume and that competition was keener and the water service more efficient than at any time before the war and that considerably more than half the traffic in most of the commodities involved was shipped by water. All but a small portion of the water-borne traffic originated in and west of Buffalo-Pittsburgh territory, indicating that the Pacific Coast interests were making their purchases in that part of the east which is tributary to the water lines and from which they can secure low rates. The commission says that the movement by water may be relatively greater now than it was during the period of the hearings. The rail lines contended that the proposed rates were no lower than necessary to yield them a fair share of the business. It was the declared purpose of the carriers to be conservative and not to meet water competition where it is a matter of serious concern and then only within reasonable limitations.

None of the proposed rates meet even approximately the coast to coast rates of the water lines. They approximated at the time of the hearings the charges available from certain interior points to the Pacific Coast terminals by rail to the Atlantic and Gulf ports and thence by water, plus such incidental charges as marine insurance and unloading and transfer charges at the Pacific Coast terminals. While on traffic to the Pacific Coast it was proposed to keep the Middle West on a parity with seaboard territory, the latter would be required to pay more than the Middle West on traffic to intermountain territory. Before discussing the rates themselves, the commission discussed the effect of the fourth section as amended, finding that the situation presented to it in former transcontinental cases has been changed by the new language in the law. Its discussion on this point is in part as follows:

The Fourth Section as Amended

Where water competition is involved, the applicants contend that they demonstrate the propriety of relief from the long-and-short-haul rule when they show that the competition by water is actual and compelling; that the rates proposed to meet the water competition, while less than they might otherwise be, are necessary if applicants are to secure an equitable share of the traffic; that the proposed rates yield some margin over the extra expense involved in taking on the additional traffic moving thereunder; and that the rates maintained to intermediate points are not unreasonable in themselves. Each of these positions, they contend, is demonstrated on the present record, taken in connection with our finding in *Intermediate Rate Asso.* v. *Director General, supra,* that the rates to intermediate points are not unreasonable or unduly prejudicial. They further contend that the present wording of the fourth section, prohibiting us from granting relief where the charge to or from the more distant point is not reasonably compensatory for the service performed, does not in anywise invalidate the sufficiency of the showing which they here make. In short, they contend that if the proposed terminal rates are all they can get, and yield something in the way of net revenue, they are perforce reasonably compensatory.

For the intermountain interests it is argued that a rate to be reasonably compensatory to the more distant terminal point must bear its full share of operating expenses, interest on funded debt, equipment and joint facility rents, taxes, and the percentage return fixed by us pursuant to section 15a of the interstate commerce act.

We are unable to accept this interpretation of the phrase "reason-

ably compensatory." So interpreted, the long-and-short-haul rule of the fourth section must become absolute or rigid from the very nature of the case. There may be difficulty in discovering to a nicety the exact legislative intent in the amended fourth section. But the rejection of an absolute long-and-short-haul clause by both Houses of Congress is inconsistent with any construction of the phrase in question which would be equivalent in effect to an absolute clause.

A similar but less extreme interpretation of the words "reasonably compensatory" is urged on behalf of various state commissions in the intermountain territory. It is pointed out that there is a margin between a rate which barely escapes being confiscatory and the highest rate which a regulating body may lawfully allow. To the intermediate point a rate might approach the latter limit while a rate to a more distant point might conceivably be less and yet not so low as to be confiscatory. Seemingly, the rate to the more distant point may contribute something less than a full proportionate share of return upon investment and thus theoretically be less than a greater rate to an intermediate point.

We are unable to accept this interpretation of the words "reasonably compensatory" as used in the amended fourth section.

Where a rate imposed by a regulatory body is under judicial review upon the allegation that the rate fixed is confiscatory, it has been held by the courts that a rate may not lawfully be fixed by such tribunal which is based alone on the out-of-pocket costs ascribable to that particular traffic, but that to be lawful the rate must be sufficient to cover a ratable proportion of the average cost of freight traffic generally, including a return on the property devoted to public service. To hold otherwise would compel the performance of a certain specified kind of service by the carrier at less than average cost. The extension of this principle to other classes of traffic, if pursued far enough, would bankrupt the road.

Where, however, carriers voluntarily propose to reduce certain rates to an out-of-pocket *plus* basis in order to augment the total traffic carried, a wholly different situation is presented. The menace of confiscation is absent, for *volenti non fit injuria;* and the additional traffic, if secured with a resulting augmentation of net revenue instead of laying a burden upon other traffic, affords the possibility of lightening the burden thereon by bringing a greater tonnage under contribution to net revenue.

The criteria of a reasonably compensatory rate in a confiscation case are therefore essentially distinct from the criteria of a reasonably compensatory rate where carriers volunteer a reduction on certain rates to an out-of-pocket *plus* basis. In the first set of cases the carrier has presumably been charged with seeking to extract from the public which is served more than the services are reasonably worth; in the second set of cases the carrier is accused by protestants, not primarily of seeking to extort more than the service is reasonably worth to those who receive the service but of working undue discrimination as between those who can and those who can not avail themselves of the lower rates voluntarily proposed.

The criterion of a reasonably compensatory rate suggested by the carriers has been indicated above. It is summarized in the formula "out-of-pocket-expenses-plus-some-profit."

Just as we have rejected the two interpretations of "reasonably compensatory," suggested by the protestants as too narrow, so we are disposed to reject the single criterion suggested by the carriers in the above formula as insufficient, standing alone. It is probably true that this formula was deemed by us as adequate in disposing of fourth-section applications prior to the amendments of the fourth section in the transportation act, 1920. We do not agree with the carriers that the fourth section has not been changed in substance. The amendment has made mandatory what theretofore rested in our sound discretion as to compensation for the service performed to the more distant point, as to circuity, and as to potential water competition. Moreover, in section 500 of the transportation act, 1920, is expressly declared the policy of Congress to foster and preserve in full vigor both rail and water transportation. We think the amendment was the Congress's way of saying that we should follow a less liberal policy in dealing with departures from the long-and-short-haul rule than had been followed in former years. Our administrative power at this time is in some respects narrower than before the amendment. The fourth section, as amended, requires the observance by us of certain administrative rules which we were enforcing prior to the amendment, but which in some measure lay within our sound discretion to modify or change. We are also required now to accord due observance to section 500 of the transportation act, 1920.

Moreover, the requirements of section 15a may not be defeated or jeopardized by the action of particular rail carriers seeking to augment their own net earnings, irrespective of the effect of rate changes adverse to the carriers of the country generally, or of a large territorial group. It clearly would defeat the intent of Congress to foster transportation by rail and water in full vigor if the rail carriers were permitted, at practically little or no profit to themselves, to operate so as to deprive water carriers of traffic which the water carriers would naturally handle. Moreover, it must be borne in mind that where the out-of-pocket theory is used as a rate basis, there is inevitably thrown upon the rest of the traffic the task of providing the bulk of the net return contemplated in section 15a. Too wide an extension of the out-of-pocket theory would transpose the entire burden of producing dividends and interest and meeting other fixed charges upon only a part of the traffic carried.

In the light of these similar considerations, we are of opinion and find that in the administration of the fourth section the words "reasonably compensatory" imply that a rate properly so described must (1) cover and more than cover the extra or additional expenses incurred in handling the traffic to which it applies; (2) be no lower than necessary to meet existing competition; (3) not be so low as to threaten the extinction of legitimate competition by water carriers; and (4) not impose an undue burden on other traffic or jeopardize the appropriate return on the value of carrier property generally, as contemplated in section 15a of the act. It may be added that rates of this character ought, wherever possible, to bear some relation to the value of the commodity carried and the value of the service rendered in connection therewith. We also find that where carriers apply for relief from the long-and-short-haul clause, of the fourth section and propose the application of rates which they designate as "reasonably compensatory," they should affirmatively show that the rates proposed conform to the criteria indicated above. It goes without saying that carriers should not propose rates or rate structures for approval in a fourth-section application which create infractions of other provisions of the interstate commerce act, and particularly of section 3.

Effect on Revenues

Extensive statistical data were offered by the carriers to prove that the proposed rates to the terminals would be sufficient to pay something over and above the out of pocket costs. After outlining these cost studies, the commission says that so far as revenue is concerned it is satisfied that taking the additional business by itself, the proposed rates generally and easily cover the extra out of pocket expenses involved in handling the additional traffic which the railroads expect to be able to obtain by reducing the rates and in certain instances, it says, that the rates would contribute to the net return on carrier property. Were the rate level alone to be considered, it says, it would be difficult to condemn the proposed terminal rates in the general westbound application. Moreover, the going water rates shown were such as not seriously to invalidate the proposed terminal rates as lower than presumably necessary to meet water competition. However, the commission says, such profit as would accrue from the proposed rates apparently would be largely offset by what would be lost thereby on the traffic that would move by rail even without the reduction. Although a large volume of the traffic in question is moving by water, the movement by rail is still very heavy and it is safe to say that there will always be a substantial movement in most of these commodities by rail because, other things being equal, the shippers prefer rail to water. The rail lines by hauling the business overland would deprive themselves of revenue they are now receiving for the haul from points of production to the ports based largely on local rates presumed to be reasonable and fully compensatory. They believe, however, that the proposed rates would yield greater net returns per 100 pounds than the local rates to the ports, although the rates to the ports would probably yield a greater percentage of profit.

Taking, for example, the iron and steel traffic from the Pittsburgh district, by far the most important traffic involved, the commission says that probably somewhere near half is moving by rail. Assuming the movement of 1,000,000 tons per annum, it is stated that by reducing the rate from $1.66½ to $1 there would be a direct loss on the 500,000 tons now being carried by rail of $6,650,000. If the effect of the reduction would be to take away from the boats one-half of the tonnage they now have it would mean a gross gain to the carriers of $5,000,000, which allows nothing for the expense of handling the additional business. If the cost of service were half of the former rate, or 83 cents, the commission says, the cost of handling the added business would

be $4,150,000, or a net gain from the added traffic of only $850,000 to apply against the loss of traffic now being handled of $6,650,000, or a net loss of $5,800,000. Other similar calculations are given and the commission says it is not prepared to say that it could base upon these estimates of collateral losses of net revenue the necessary denial of the applications, but it is of the opinion that before it grants the affirmative relief asked it is entitled to be shown by the carriers the probable extent of such collateral losses of net revenue, if any, and the way in which such losses would be divided as between various carriers and territorial groups. It is pointed out that the lines east of Pittsburgh, although formal parties to the application, stated at the hearing that they were not to be understood as either actively supporting or opposing it and the commission says it seems clear that the lines east of Chicago have little, if any, reason to expect increased gross or net revenue from the proposed rates. The probabilities are that they would suffer substantial losses. For example, it is stated that the eastern lines propose to haul iron and steel about 468 miles from Pittsburgh to Chicago for a division of 15 per cent of the through rate or a proportion of 15 cents instead of from Pittsburgh to Baltimore, about 311 miles, at the local rate, which is of 35 cents.

"If the carriers are of opinion," the commission says, "that no collateral loss in net revenue would result, the obligation to make such showing is upon the carriers. Should they concede the probability of a net loss in revenue to the carriers as a whole, we should have to consider whether such a shrinkage would adversely affect the return at which we are required to aim under section 15a; and if, reasonably assured on this point, we are prepared to allow the carriers to assume voluntarily a shrinkage in their net revenue, the question might arise whether it is lawful to focus the whole gain resulting to the shipping public upon those shippers mainly located in a particular section or sections, or whether the relief might not more appropriately be applied throughout a wider extent of territory and among a greater number of shippers. We find that the carriers have failed to make the necessary affirmative showing as to the collateral losses of revenue which would result from the proposed terminal rates."

The proposed rates on sulphur, the commission says, are reasonably compensatory and as to the Southern Pacific application it finds that the collateral loss of rail revenue involved is negligible. It finds that the rates proposed will be reasonably compensatory except that "out of abundance of caution" it is of opinion that the proposed terminal rates should be increased by 5 cents per 100 pounds. This would produce a rate on barley in excess of the present rate so that item is omitted from the authority granted.

Separate Opinions

Commissioner Meyer, in a concurring opinion in which Commissioners Esch and Lewis joined, agreed with the finding that the carriers have not justified the relief sought, but did not agree with the findings that a violation of section 3 results from the carriers' proposals with respect to rates from Chicago and points in Chicago territory to the Pacific Coast. He said in part:

> Practically all articles upon which the rates apply are produced both on the Atlantic seaboard and in Chicago territory. Under normal conditions producers at Chicago have an advantage in being located nearer the Pacific Coast and have correspondingly lower rates. With the establishment of rates via water routes from the eastern seaboard which are lower than the rail rates from either the seaboard or Chicago, the Pacific Coast supplies its requirements very largely from the East with articles which were formerly shipped from Chicago. If the western rail carriers are to participate at all in the transportation of these commodities, it is necessary for them to make rates which will attract traffic to their lines from the seaboard or from Chicago. If the traffic originates on the seaboard they must divide their revenues with the eastern carriers, but if the traffic moves from Chicago they retain the entire transportation charge. If the rate from Chicago is higher than the rate from the seaboard, the traffic will move from the seaboard, and the revenue of the western carriers to that extent will be depleted. It is therefore the competition of the rail carriers serving Chicago with the water carriers serving the eastern seaboard which compels the western carriers to reduce their rates from Chicago if they are to continue to participate in this traffic.
>
> One of the reasons advanced in the report for denial of relief from Chicago is that it is not proposed to apply from New York to the intermediate territory the same rates as apply from Chicago; and that the coast points would therefore have a choice of markets at equal rates which the intermediate points would not have. Water competition does not affect the rates to the intermediate points of destination in the intermountain territory, and rates to these points therefore may reasonably increase with distance. The western carriers from Chicago will continue to transport traffic to the intermountain territory because no other carriers serving the same or other markets of supply have rates to these points which will deprive them of the traffic. To this territory Chicago, served by the western carriers, is the nearest source of supply. To require the blanketing of rates from Chicago and the eastern seaboard to this territory would be to require the western carriers to participate in equal rates from eastern points and divide their revenue with the eastern carriers and thus deprive them of a portion of the revenues which they would otherwise retain. The intermountain territory now has no choice of margets at equal rates, and would not be at all benefited by excluding Chicago from reaching the coast cities while these cities already have the advantage of the lower rates from the east via water line.
>
> The handling of all-rail traffic from Chicago rather than from the seaboard would preserve the revenues of the western carriers and be of benefit to the public at large served by them, including the intermediate points of destination, in that any addition to the revenues of these carriers may ultimately enable them to correspondingly reduce rates to intermediate points. It is my judgment that even if because of the impairment of their revenues the carriers should not reduce their all-rail rates from the eastern seaboard, the western carriers might well be justified in meeting the competition of the water routes from the East by reducing the rates from producing points on their lines in Chicago territory in order that they may not be deprived of the opportunity of hauling traffic to supply the requirements of the Pacific Coast points.

Commissioner Aitchison, dissenting in part, said:

> The record in the westbound application shows that the applicants have met all the affirmative tests stated in the report as criteria; but the application is denied because they have not gone further and disproved a net loss because of collateral changes in traffic which supposititiously may affect injuriously the earnings of some—not all—of the participating carriers. I am not able to conclude that having shown the necessity for relief and having satisfied all other tests as to the reasonably compensatory character of the rates proposed by them, they should be sent hence and denied access to certain important traffic found to be remunerative, merely because they have not in their presentation entered the realm of speculation and proved a negative by conjectural evidence. Therefore I dissent from the denial of that application.
>
> The addition of 5 cents to the terminal charge made by the majority in the eastbound application finds no warrant in the record, and should not be imposed.

Commissioner Potter concurred in this expression.

Commissioner Hall concurred in the conclusions reached except that he objected to the arbitrary addition of 5 cents to the rates proposed by the Southern Pacific as finding no support in the record. As to the general westbound application, he said: It may be that rates and movements from certain groups on certain commodities, iron and steel, for example, could have been so segregated in the presentation that fourth section relief could be granted on some even if denied on others.

Commissioner Campbell concurred in the conclusions of the majority in denying certain of the applications, but objected to the granting of the Southern Pacific and the sulphur applications, on the ground that if the more distant rates are reasonably compensatory, they become fully compensatory and reasonable at many intermediate points. He expressed the opinion that the construction placed on the amendment does not recognize the full intent of Congress and that "reasonably compensatory" as used in the amendment means a rate equal in amount to a non-confiscatory rate.

Employing and Educating Enginemen and Firemen*

IN THE PAST when locomotives were small and always easily handled in case of breakdowns and when the pooling of power had not become as universal as it is today, railroading held out attractions greater than other lines of employment, as far as wages, physical labor, etc., were concerned. The position of locomotive engineer was worth working for and as the first step in this direction was a job as fireman, it followed that there were many applicants for this position. Foreign labor was not as plentiful as it is today, and consequently what are now termed laboring jobs, such as wiping, knocking fires, cleaning cinder pits, helping machinists and hostlers, and other jobs about roundhouses were filled by young Americans, and each of the above positions were considered as in line for a job of firing. During the time he knocked about the roundhouse in the above capacities the fireman absorbed a lot of valuable information as to the construction, care and maintenance of a locomotive.

The Employing Officer

The labor supply should be developed in the territory served. Young men leaving school or university and seeking employment for the first time, should be informed by circular or other printed matter where to apply to railroad offices and who to apply to for the particular job for which men are wanted. This should be done by mailing this information to station agents to be posted on bulletin boards at stations. Unless men live at railroad division points, they know little or nothing about the opportunities in railroad service. Systematic development of the labor material available will do much in remedying labor conditions on railroads at the time of year when men are needed.

The employing officer should have regular days in his office to confer with applicants for positions, and this information should be given on the circulars. This officer should be a responsible person and carefully selected. The first impression made on an applicant is usually a lasting impression. Does he ask the applicant to sit down and treat him as he would like to be treated by taking interest enough in him to ask where he lives and when he arrived, what vocation he followed, if any, and where he could be found when needed, and, in the meantime, judge his mental and physical fitness for the job before giving him the application to fill out? It will be claimed that no one has time to converse with all the men who apply for jobs. Might it not be cheaper in the end to have some capable person or organization responsible for handling all applicants with the chance of getting the right man at a time of need, instead of finally having to take whoever comes? A kind word of encouragement to the promising man, a word of advice to improve himself by study, a recommendation where to obtain literature by recognized authorities on the subject of firing, and a record or symbol written on the face of his application is all that is needed in the way of a preliminary interview and record.

Progressive Examinations

We believe railroads should establish a system of progressive examinations when a man is employed first as a fireman. He will be given the questions on which he will be examined at the end of the first year; having answered these questions satisfactorily, he will then be given questions for the following year. Having passed this examination, he will be given a third and final set of questions, on which he will be examined before being promoted to engineman. It is not expected that a man will answer these questions without assistance, and in order that he may understand them properly, there should be established a school of instruction in the use of the air brake and all other locomotive appurtenances. He should also be invited, and urged, to ask the master mechanic, traveling engineer or air brake instructor or any other official for such information as may be required on any points in connection with his work.

If a man passes 80 per cent or more in all examinations he should be given a certificate. If a man fails to pass the first or second examination, he should be dropped from the service. At the third examination, if a man should fail to pass 80 per cent of the questions asked, two more trials not less than two months apart will be given him to pass the same examination. If he then fails to pass by a percentage of 80 he shall be dropped from the service.

Firemen passing the third and final series of questions will be promoted in order of their seniority as firemen, except that those who pass on the first trial shall rank when promoted above those who pass on the second or third trial and those passing on the second trial shall rank above those who pass on the third trial.

Enginemen employed shall be required to pass the third series of questions before entering the service.

The report is signed by J. B. Hurley (Wabash), chairman; W. H. Corbett (Mich. Cent.); J. C. Simino (Sou. Pac.); Andrew Wheeler (C. & N. W.), and C. W. Stark (N. Y. C.).

Discussion

It was evident from the discussion that most of the railroads are following the practice outlined in the paper for examining and promoting firemen. The methods of giving the examination, however, vary considerably. In some cases the new fireman, on entering the service, is given the questions for the first year's examination, which he must answer and turn in by the end of the year. He then receives the questions for the second and third year's examination after having answered the preceding questions. On other railroads the men are not given the examination questions, but are called into the division headquarters to prepare a written examination on questions which they are not permitted to take away with them. The written examination is generally accompanied by an oral examination.

There is considerable variation as to who hires the firemen. In some cases where conditions require the taking on of a large number of men, the men are hired by almost anyone available. The opinion most generally expressed during the discussion, however, was that the traveling engineer should select the new men. It is evident that the problem of securing satisfactory recruits is a difficult one, as compared with conditions in the days when young men were promoted from roundhouse laborers via the ashpit to positions as firemen. One of the difficulties is the inability of many applicants to finance themselves during the period of their trial trips. The opinion was expressed by a number of the members that the railroads should allow student firemen at least the amount of their expenses on the road. This has been solved to some extent on the Baltimore & Ohio by providing the students with meal tickets at certain specified boarding houses.

B. J. Feeney (Illinois Central) follows the practice of passing the word around among the enginemen, firemen and shopmen when new firemen are to be hired. He asks that these employees send men to him with letters of recommendation. This has worked well in securing new employees who come to their jobs with a sense of responsibility and live up to it.

*Abstract of a paper presented before the Traveling Engineers' Association, Chicago, Nov. 1, 1922.

THE MISSOURI PACIFIC in 1921 paid out $204,972 in livestock claims, or an average of $28.40 per mile of road; and is asking the aid of cattle owners, the press and the public in a campaign to reduce the number of animals killed by trains.

Motor and Trailer Car Driven by 120 h.p. Gasoline Motor

Motor Driven Rail Car with High Power Unit

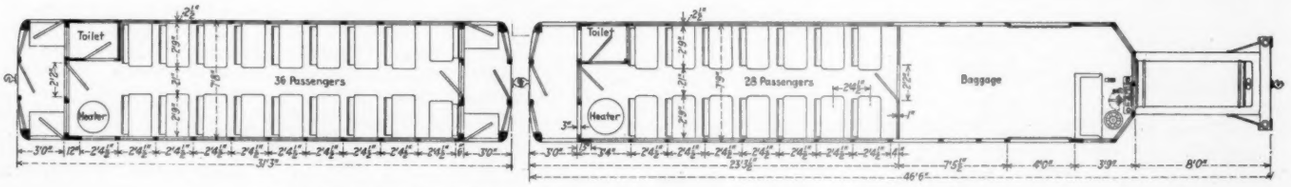
New Equipment for Maryland & Pennsylvania Has 120 Hp. Engine and Seats 76 Passengers

THE MARYLAND & PENNSYLVANIA has recently received a passenger train, consisting of a gasoline motor coach and trailer, with a total seating capacity for 76 passengers, from the Russell Company, Kenosha, Wis. The motor coach is 37 ft. 6 in. in length over the end sills, with a 4-ft. 10-in. baggage compartment and a seating capacity of 28 in the passenger compartment. The trailer coach is 31 ft. 3 in. in length with seats for 40 passengers. Drop seats in the baggage compartment accommodate eight additional passengers. The motor coach is fitted with a 120-hp. motor and weighs 28,000 lb. The trailer weighs 19,000 lb., making a total for the train of 47,000 lb., or 691.2 lb. per seat, excluding the drop seats in the baggage compartment.

The cars are driven by a 5¾-in. by 7-in. six-cylinder Wisconsin gasoline motor, which weighs 1,275 lb. and develops approximately 120 hp. at 1,200 r. p. m. This motor, handling the motor car and trailer, averages 3.8 miles per gallon of gasoline. It is mounted on the underframe in front of the forward truck center and is equipped with an Eismann dual magneto ignition system, Stromberg car-carburetor and Leece-Neville generator and starting units. A separate 32-volt generator, with a 16-cell storage battery of 70 hours' capacity, furnishes power for the headlight and train lighting. Fuel is carried in two supply tanks with a total capacity of 52 gallons and is fed to the carburetor by the vacuum system, supplemented by air pressure on the supply tanks.

The underframe consists of two 9-in. 25-lb. steel channels spaced 33 in. apart over the outside faces. The drive shaft is carried back through universal joints to the clutch and transmission, which are located under the middle of the underframe. Power for the air compressor and electric light generator are taken off this shaft, in the former case through a silent chain drive and in the latter through a belt. The transmission provides three speeds forward with a reduction of nearly five to one in low. The reverse gear is specially designed for railway service.

The driven shaft from the transmission passes into a drop gear case just back of the transmission, from this shaft the power is carried down to the drop shaft by a silent chain drive. The shafts inside the case carry two sets of gears. Those on the driving shaft are permanently keyed to the shaft while those on the drop shaft are connected to the shaft by a three position clutch. These gears provide speed ratios of 1.1 to 1 and .76 to 1 for each transmission speed, the purpose being to permit the motor to be operated at a speed lower than that provided by the normal ratio, when the car is traveling at high speed under conditions which do not require heavy duty from the motor.



Maximum Size Floor Plan of the Russell Motor and Trailer Cars

The drop shaft extends through the case in both directions and from it flexible drive shafts are carried forward and backward to a gear case on the inside axle of each truck. This gear case contains a bevel pinion, supported on ball bearings, which meshes with a bevel gear attached to the axle. The gear case is carried on the axle itself, but attached to it is a torsion arm which is spring supported on a bracket attached to the truck crossframe.

The trucks have a wheelbase of 4 ft. 8 in. They are built up of cast steel pedestal frames of 9-in. I section, connected by structural steel cross members of channel section, and weigh 3,750 lb. each. The side and cross members are joined by top and bottom gusset plates which are riveted to the chan-

nels and bolted to finished surfaces on the top and bottom of the sideframe castings. Davis cast steel wheels 24 in. in diameter are mounted on 3¼-in. solid steel axles. The outside journals are 3 in. in diameter and are fitted with ¼-in. steel sleeves and Hyatt roller bearings. The bearings are designed to carry a vehicle with a maximum weight of 40,000 lb. and run in oil. They are mounted in removable cages and are carried in a cast steel journal box on which the truck frames are supported through single coil springs. The truck bolster is made up of a 4-in. semi-elliptic spring the ends of which are supported by swing links from the truck cross frame. To the top of this spring a short channel for the support of the center and side bearings is attached by two U-bolts which also serve as the spring band.

Except for the shorter baggage compartment and the location of the toilet and heater in the trailer car, the floor plans of the Maryland & Pennsylvania coaches are similar to those shown in the drawings, which are the arrangements of the builder's full size car bodies. The bodies of the Maryland & Pennsylvania cars are built separate from the underframes, to which they are securely bolted. The overall height is 11 ft. 4 in. above the rail and the floor is approximately 42 in. above the rail. The bodies are of wood frame construction with steel sheathing. The trailer of the Maryland & Pennsylvania train is fitted with a blind vestibule at the front end, in which the heater is located; the steps at the rear end of the motor car serve the front end of this car. The regular arrangement of the builder, however, provides for vestibule entrances at both ends of the trailer car and at the rear end of the motor car. The vestibules are fitted with side, end and trap doors.

Each car is fitted with a toilet and the trailer car carries a small Arco Ideal hot water heater. The motor car is heated by the motor exhaust, a portion of which may be diverted through metal ducts carried along the sides of the car just above the floor.

The cars are fitted with Westinghouse self-equalizing automatic brakes. The brake heads and shoes are of the M. C. B. type and the couplers are Van Dorn vertical plane type, one-half M. C. B. size. The motor car is fitted with a pilot, an electric headlight, a bell, air operated whistle, and marker brackets, to conform to steam railroad requirements.

Freight Car Loading

WASHINGTON, D. C.

THE USUAL END of the year seasonal decline in freight business manifested itself during the week ended November 4, when the total revenue freight car loading was 994,827 as compared with 1,014,480 in the week ended October 28, which marked the peak for this year. The loading for the week of November 4 was, however, 157,251 cars greater than that for the corresponding week of last year and 79,212 cars greater than that for the corresponding week of 1920. As shown by a chart published by the Car Service Division of the American Railway Association, the peak loading this year was from one to five weeks later than it was in the four preceding years. In 1918 the peak was reached in the week of September 23, when 989,788 cars were loaded; in 1919, in the week of September 23, when 995,901 cars were loaded; in 1920, in the week of October 14, when 1,018,539 cars were loaded, and in 1921, in the week of October 21, when 964,811 cars were loaded. Prior to 1918 the car loading figures were not compiled but the ton-mile figures show the peak to have been reached in 1916 about October 1 and in 1917 the peak was in May, shortly after the United States entered the war.

The peak for 1922 was only three-fourths of one per cent below the record for any single week in the history of the railroads. The decline from the high point is usually very rapid toward the end of the year as the wholesale shipments of Christmas goods cease, the grain reaches the elevators, the lakes freeze up and reserve stocks of coal have been accumulated, but as the result of continued heavy coal shipments and the delayed movement of grain because of car shortage in the west it is expected that the decline this year will be less abrupt. For two weeks the loading this year

REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO, WEEK ENDED SATURDAY, NOVEMBER 4, 1922.

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L.C.L.	Miscellaneous	Total revenue freight loaded: This year, 1922	Corresponding year, 1921	Corresponding year, 1920
Eastern	1922	9,794	3,793	56,487	2,238	5,993	6,196	65,359	97,136	246,996	.....	.....
	1921	9,708	3,255	49,440	2,255	4,828	3,086	66,357	78,504	.....	217,433	217,514
Allegheny	1922	3,915	3,785	56,944	5,790	3,201	9,373	51,066	78,613	212,687	.....	.....
	1921	2,581	3,002	50,255	2,647	2,757	4,231	47,882	57,756	.....	171,111	193,511
Pocahontas	1922	243	302	20,167	433	1,624	58	5,713	3,549	32,089	.....	.....
	1921	220	201	22,823	194	1,257	9	5,627	3,323	.....	33,654	33,539
Southern	1922	4,162	2,465	23,283	1,274	21,215	1,373	39,353	46,930	140,055	.....	.....
	1921	3,141	1,975	23,771	526	16,377	522	39,177	38,773	.....	124,262	126,783
Northwestern	1922	15,845	9,969	10,806	1,436	14,324	27,151	27,029	39,429	145,989	.....	.....
	1921	11,168	8,288	7,559	703	11,811	1,871	28,783	34,479	.....	104,662	147,953
Central Western	1922	12,461	15,479	20,819	307	6,615	2,346	31,054	57,787	146,868	.....	.....
	1921	9,701	11,231	18,054	219	6,632	752	31,861	44,693	.....	123,143	132,027
Southwestern	1922	5,492	3,938	5,571	163	7,041	549	15,163	32,226	70,143	.....	.....
	1921	3,700	2,923	5,104	141	7,412	714	15,938	27,379	.....	63,311	64,288
Total Western Districts	1922	33,798	29,386	37,196	1,906	27,980	30,046	73,246	129,442	363,000	.....	.....
	1921	24,569	22,442	30,717	1,663	25,855	3,337	76,582	106,551	.....	291,116	344,268
Total All Roads	1922	51,912	39,731	194,077	11,641	60,013	47,046	234,737	355,670	994,827	.....	.....
	1921	40,219	30,875	177,006	6,685	51,074	11,185	235,625	284,907	.....	837,576	.....
	1920	36,223	31,313	203,820	14,748	56,797	66,893	201,478	304,343	.....	.....	915,615
Increase Compared	1921	11,693	8,856	17,071	4,956	8,939	35,861	.....	70,763	157,251	.....	.....
Decrease Compared	1921	.....	.....	.....	.....	.....	.....	888	.....	.....	.....	.....
Increase Compared	1920	15,689	8,418	.....	.....	3,216	.....	33,259	51,327	79,212	.....	.....
Decrease Compared	1920	.....	.....	9,743	3,107	.....	19,847	.....	.....	.....	.....	.....
Nov. 4	1922	51,912	39,731	194,077	11,641	60,013	47,046	234,737	355,670	994,827	837,576	915,615
Oct. 28	1922	51,913	42,644	197,928	11,388	60,584	48,005	233,680	368,338	1,014,480	951,384	981,242
Oct. 21	1922	53,680	40,473	196,771	10,631	60,344	45,468	231,797	364,595	1,003,759	964,811	1,008,818
Oct. 14	1922	52,492	39,141	196,926	10,208	59,727	46,362	226,123	352,491	983,470	910,529	1,018,539
Oct. 7	1922	50,553	39,359	189,312	9,880	57,844	47,439	228,515	345,267	968,169	899,681	1,011,666

has been greatly in excess of that for the corresponding weeks of any previous year.

The principal decrease as compared with the preceding week was in miscellaneous freight, which showed a reduction of 12,668 cars. There was also a decrease in coal of 3,851 and livestock of 2,913. Grain loading showed a decrease of only one car. There were also slight decreases in forest products and ore, but merchandise l. c. l increased 1,057 cars. As compared with the corresponding week of last year there were increases in all classes of commodities except merchandise and in all districts except the Pocahontas. As compared with the corresponding week of 1920 there was an increase in all classes of commodities except coal, coke and ore and in all districts except the Pocahontas and the North Western.

The summary as compiled by the Car Service Division is given in the accompanying table.

In a bulletin issued last week the Car Service Division said that there is no index of current business conditions more reliable than the loading of miscellaneous freight on the railroads and, calling attention to the fact that miscellaneous loading for the week of October 28, 368,338, had exceeded all previous records, the bulletin said: "If there existed any adjusted period in the country's history which might with certainty be termed normal, the present record car loadings indicate a full and complete recovery from the post-war deflation.

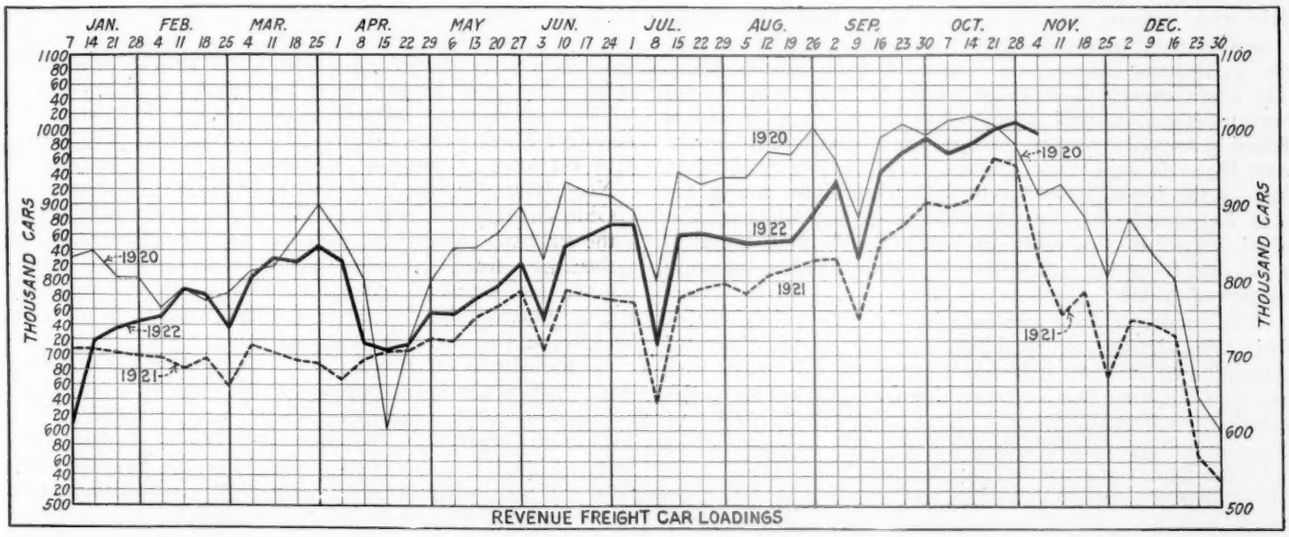
"The fluctuation in the progress of agriculture and industry during and since the war is depicted in the depressions and peaks of the curves for the various years, and an analysis of economic conditions existing during periods of low carloadings gives a fairly accurate picture of the causes of price decline and periods of inflation.

"In analyzing the trend of the loading for 1922 in relation to former years, it will be noted that in spite of the fact that the year was commenced with extremely low loadings, a gradual and healthy improvement is indicated up to the period of the coal strike. This arrangement in this industry, coupled with the effect of the shop strike on the railroads which commenced on July 1, retarded the accomplishment of an immediate return to a period of exceptionally heavy carloadings and an upward trend of prices. Commencing in August, however, the recovery of the railroads was rapid and with the resumption of coal mining in the union fields carloadings have increased to a point where for the week ending October 28 they were but a fraction of one percent under the highest week in the history of the railroads.

"While the general trend of the curves indicates a falling off of business during the months of November and December, this period has been forced ahead during 1922 to a point where we can reasonably expect a continuance of exceptionally heavy loading this year beyond the period of prior years. It is reasonably certain, therefore, that the entire year of 1922, when completed, will be indicative of the fact that business conditions throughout the year and the performance of transportation will lend special emphasis to improved economic conditions and a return to so-called normal conditions."

Earlier in the year the Car Service Division had made an estimate, based on previous experience and assuming a settlement of the coal strike at an earlier date than was realized, that a loading of 1,100,000 cars might be attained by October 21, but the coal strike lasted for some weeks longer and the shop strike also intervened.

The railroads furnished a slightly larger percentage of the open top cars required during the week of October 28 than during preceding weeks, 61 per cent as compared with 59 the week before. While 673,638 cars were required, 408,816 were furnished and 378,092 were loaded. For coal loading the percentage was 57 as compared with 54 furnished the week before.



The freight car shortage for the week ended on October 30 averaged 179,239, an increase of 12,890 cars over the average for the preceding week. The shortage included 91,039 box cars, an increase of 9,305, and 47,273 coal cars, an increase of 698. The largest shortage reported was in the Central Western district, 45,887, while the shortage in the North Western district was 39,164, but the greatest demand for box cars was in the North Western district, where shortages of 27,160 were reported.

The railroads on November 1 had 249,960 freight cars in need of repairs, or 11 per cent of the cars on line. This was a reduction of 20,085 cars since October 15 last. This also was the smallest number of freight cars in need of repairs since March 1, 1921. Since July 1, the date on which the shopmen's strike began, there has been a reduction of 74,623 cars in the number of bad order cars, the total on that date having been 324,583, or 14.3 per cent of the cars on line. On November 1 last year, the number of bad order cars was 345,201.

Of the total on November 1, 198,669 were in need of heavy repairs, a reduction of 16,253 cars since October 15, and 51,291 in need of light repairs, a decrease of 3,832 since October 15.

Effect of the Elections on Railroad Legislation

WASHINGTON, D. C.

AMONG THE QUESTIONS most frequently raised in discussions as to the significance and probable results of the recent elections, which will have the effect of greatly narrowing the present large Republican majorities in Congress, is the one as to how the transportation act will be affected. It is expected that the defeat of numerous of the more conservative of the Senators and Representatives who voted for the law two and a half years ago, and their replacement in many cases by men of more radical tendencies, will tend to renew the agitation which has been carried on since early in 1921 for a repeal of the section under which the Interstate Commerce Commission is directed to make rates in an effort to produce a predetermined percentage of return on the value of the railroad property. Along with this goes the demand for a restoration of the former powers of the state railroad commissions, as the object in both cases is to bring about reductions in freight rates.

However, many of those who are anxious to see the law, or at least its rate-making provisions, given a complete and fair trial without important amendment under conditions somewhat more normal than have prevailed since its passage, see no occasion for serious alarm for some time to come. The new Congress does not get on the job until next December, unless something should happen to force President Harding to call an extra session after March 4, which he now hopes to avoid, and in that time much may develop, just as the improvement in business conditions during the past few months has already changed a general complaint of high rates on the theory that they were stifling traffic to a demand for more cars in which to ship a record-breaking volume of traffic.

While many of those who have just been elected conducted their campaigns to a considerable extent on the issue of opposition to the law, it is much easier to claim than it is to prove that there has been anything like a plebiscite on the question, and until March 4 the Congress will consist of those who have successfully withstood the demand for an emasculation of the act during the past year and a half. The Congress so many of whose members will be retired to private life as a result of the election was criticized as a "do-nothing" Congress. One of the things it did not do was to reduce freight rates, but if good business continues through another year and the Interstate Commerce Commission continues to demonstrate occasionally that section 15-a is no bar to such rate reductions as it thinks justified, even though it may be used as the basis of an argument against reductions it does not think justified (as in the recent transcontinental rate cases), interest in the freight rates may not be so keen in another year as it was last year and the first part of 1922. Also the spectacle of a deadlocked Congress, or a deadlock between the administration and Congress, may be sufficiently interesting to allay the demand which is so prevalent in hard times for Congress to "do something." There is some uncertainty as yet as to the extent to which the radical element, which can hold the balance of power in the new Congress, will be able to so organize itself as to make the necessary trades to put through the legislation it desires, or as to whether it will, as in the past, be mainly successful in obstructive tactics. Even if a majority vote can be secured, there is always the question of obtaining a two-thirds vote to override a presidential veto. As a Senator, Harding did not take part in the final vote on the transportation act, but he was paired in favor of it and he has never expressed any sympathy with the proposals for seriously modifying it, except as to the labor provisions.

The Esch-Cummins bill was not handled exactly as a partisan measure and it was approved by a Democratic President, although most of the votes by which it was put through were Republican and a majority of the Democrats in both the Senate and the House voted against it. Criticism of the act also has been to a considerable extent non-partisan and some of the loudest demands for a repeal or amendment of the rate-making provisions of section 15-a have come from Republicans—notably Senator Capper, who had voted for the bill—but a great deal of denunciation of the law has come as a matter of course from the Democratic side. The great reduction in the Republican majorities in both the House and the Senate in itself, therefore, gives some reason for apprehension but of greater importance is the large number of radicals who have been elected to Congress, regardless of their party affiliations. Among these are such men as Brookhart, Shipstead, Howell and Wheeler, who are expected to form an alliance with Johnson, Borah, LaFollette, Norris and others of the so-called radical group in the upper house, where the Republican majority is so slender that by sticking together they could easily exert a powerful influence on legislation. C. C. Dill, who succeeds Poindexter from Washington, has also been a lecturer for the Plumb Plan League.

In the Senate there will be 52 Republicans and 44 Democrats, but 19 of the Republicans have been classified as radicals, "progressives" or liberals, and 15 of them constitute the "farm bloc," while taking the Senate as a whole, only 40 may be considered conservatives and 56 as liberals or radicals. The Senate committee on interstate commerce, which handles most railroad legislation, has lost four conservative Republicans, Townsend of Michigan, Poindexter of Washington, Kellogg of Minnesota and Frelinghuysen of New Jersey, and two conservative Democrats, Pomerene of Ohio and Myers of Montana. All of these were defeated in the elections except Myers, who was not a candidate. All of them had voted for the Esch-Cummins bill. Senator Cummins, one of the principal authors of the law, will probably remain as chairman of this committee, but he is in poor health and LaFollette is next in line.

In the House there will be 230 Republicans (including one socialist, one independent and one farm labor member) and 205 Democrats, but they have been classified as 210 conservatives and 225 liberals. The House committee on interstate and foreign commerce will lose the following Republicans as the result of the election, including those who were not candidates for re-election: Sweet of Iowa, Stiness of Rhode Island, Jones of Pennsylvania and Burroughs of New Hampshire. These were all considered conservatives and all voted for the Esch-Cummins bill. Representative Johnson of Mississippi, a Democrat, who was against the bill, was also defeated. The chairmanship of this committee will probably remain with Samuel E. Winslow of Massachusetts, a conservative.

At the present time the railroads have no program of affirmative legislation to ask of Congress, although they are vitally interested in proposed anti-strike legislation and other changes in the labor provisions of the law, and it is quite likely that the principal result of the changes in Congress will be to merely increase the number of hostile bills they will have to fight. There are some who believe that the chances of legislation to prevent a recurrence of the shop strike of this summer and of the threat of a trainmen's strike that caused some concern a year or so ago, have been reduced by the effect of the vote demonstration upon the present Congress. This is on the theory that the vote represented a general repudiation of the ideas that have been expressed by the present head of the administration. However, the chances for such legislation were somewhat doubtful before, in spite of the rather strong expressions of public opinion at the time of the strikes, and the intentions of the administration along that line have not yet been definitely announced.

The primary purpose of the extra session called for November 20 is to try to pass the ship subsidy bill, but it is

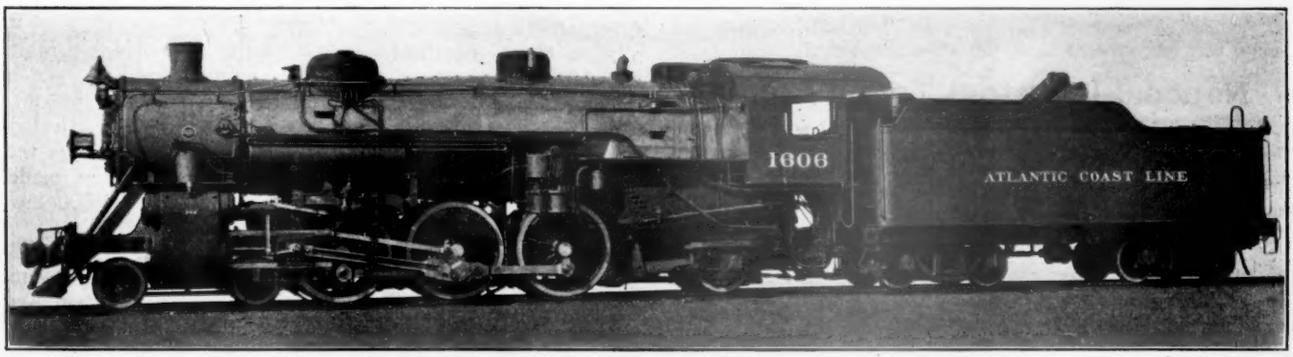
considered probable that the President will also propose some amendments to the labor provisions of the transportation act, such as he has suggested in the past, in his address or message to Congress at the opening of the session. Some of the leading Senators have been giving some consideration to the subject for some time and Chairman Cummins, on his return to Washington from Iowa, called at the White House on Tuesday and made an engagement to confer with the President later on proposed railroad legislation.

Senator Cummins will endeavor to have Congress consider amendments to prohibit strikes and, by way of compensation for this restriction, to guarantee some kind of a "living wage"; also to transfer the Labor Board from Chicago to Washington and possibly to make it an adjunct of the Interstate Commerce Commission and reorganize it to consist of members representing the public only. The Senator also wants to try again to enact a compulsory consolidation measure and it is understood that he is now considering a plan for the creation of a company to own all railroad equipment. While legislation of this kind may be put through the Senate, the prospects for action in the House are regarded as much less certain, particularly as the introduction of the subject will be a signal for arousing the demand for a repeal of the rate section, and as the short session will be rather crowded with the subsidy bill and the necessary appropriation bills anyway.

Pacific Type for Passenger and Fast Freight

Latest Design for Atlantic Coast Line Is Especially Adapted to Conditions on That Road

THE MAIN LINE of the Atlantic Coast Line is characterized, throughout the greater part of its length, by comparatively light grades and curves. A heavy passenger traffic is handled, especially during the winter tourist season, and the freight consists largely of perishable goods, which are moved on fast schedules. Up to 1911 a large part of this traffic was handled with locomotives of the Ten-wheel type, but the increased weight of passenger trains required locomotives of greater power than could be obtained with this wheel arrangement and, in the year mentioned, the Pacific type was adopted for the heaviest passenger traffic. These Pacifics, built by the Baldwin Locomotive Works, were subsequently followed by others built on various orders. The latest development of the series is shown in the accompanying illustration of engine 1606, which is one of 45 ordered from the Baldwin Locomotive Works in 1922. A comparison of the leading dimensions of these various Pacific type designs is given in the following table.



Pacific Type with 69 in. Drivers for Use in Mixed Service

Date	Cylinders	Diameter of drivers, in.	Steam pressure, lb. per sq. in.	Grate area, sq. ft.	Water heating surface, sq. ft.	Superheating surface, sq. ft.	Weight on drivers, lb.	Weight, total engine, lb.	Tractive force, lb.
1911	22 in. by 28 in.	72	185	54.2	3,539	...	138,950	220,850	29,600
1912	22 in. by 28 in.	72	200	54.2	2,917	590	139,800	225,900	32,000
1914	22 in. by 28 in.	68	200	54.2	2,635	524	140,400	226,500	33,900
1918	23 in. by 28 in.	68	200	56.5	3,345	792	151,050	243,850	37,000
1922	25 in. by 28 in.	69	200	66.7	3,349	830	166,770	275,950	43,000

A combustion chamber was used in the design of 1914, reducing the tube length from 20 ft. 6 in. to 18 ft. 6 in. This accounts for the reduction in heating surface.

The new locomotives, which are designated as Class P-5-B, are closely similar, in weight and general dimensions, to the standard light Pacifics built for the U. S. R. A. The most important change is a reduction in the driving wheel diameter from 73 to 69 in. This raises the tractive force and gives a ratio of adhesion in the new locomotives of 3.88. The weight on drivers is thus utilized fully and the hauling and steaming capacities are large in proportion to the wheel loads carried in this design.

The boiler has a maximum diameter at the dome ring of 86 in. and is built with a conical connection in the middle of the barrel. This provides an ample water space under the combustion chamber, which is 23½ in. long. The firebox seams are welded throughout and the tubes are welded into the back tube sheet. Flexible bolts stay the combustion chamber and throat, and there is a partial installation of such bolts in the sides and back head. The firebox contains an arch, and the labor-saving equipment includes a power-operated fire door and grate shaker and a coal pusher on the tender.

The valve gear is of the Baker type, controlled by the Ragonnet power reverse mechanism. The valves have a steam lap of 1⅛ in. and an exhaust clearance of ¼ in. and are set with a travel of 6½ in. and a lead of ¼ in. The guides and crossheads are of the alligator type and the piston rods, in accordance with Atlantic Coast Line practice, are bolted to the crossheads instead of keyed.

These locomotives have ample speed capacity for the

passenger train schedules on the Coast Line, and they are also well adapted to fast freight service on lines having moderate grades. They are, therefore, an excellent "all-around" engine for work on this road.

Further particulars are given in the table of dimensions.

TABLE OF DIMENSIONS, WEIGHTS AND PROPORTIONS

Type	4-6-2
Service	Passenger and fast freight
Track gage	4 ft. 8½ in.
Cylinders, diameter and stroke	25 in. by 28 in.
Valve gear	Baker
Valves, kind and size	Piston, 14 in. dia.
Weight in working order:	
On drivers	166,770 lb.
On front truck	54,330 lb.
On trailing truck	54,850 lb.
Total, engine	275,950 lb.
Tender	194,050 lb.
Wheel base:	
Driving	13 ft. 0 in.
Rigid	13 ft. 0 in.
Total engine	34 ft. 11 in.
Total engine and tender	70 ft. 9½ in.
Driving wheels, diameter outside tires	69 in.
Boiler:	
Type	Conical
Steam pressure	200 lb. per sq. in.
Fuel	Bituminous coal
Diameter first ring, outside	74¾ in.
Firebox, length and width	114⅛ in. by 84¼ in.
Tubes, number and diameter	188—2¼ in.
Flues, number and diameter	36—5½ in.
Tubes and flues, length	19 ft. 0 in.
Grate area	66.7 sq. ft.
Heating surfaces:	
Firebox, including combustion chamber and arch tubes	273 sq. ft.
Tubes and flues	3,076 sq. ft.
Total evaporative	3,349 sq. ft.
Superheating	830 sq. ft.
Combined evaporative and superheating	4,179 sq. ft.
Tender:	
Water capacity	10,000 gal.
Fuel capacity	16 tons
General data, estimated:	
Rated tractive force	43,000 lb.
Cylinder horsepower	2,082
Weight ratios:	
Weight on drivers ÷ total weight	60.4
Weight on drivers ÷ rated tractive force	3.88
Boiler ratios:	
Combined heating surface ÷ cylinder horsepower	2.01
Tractive force ÷ combined heating surface	10.28
Tractive force × diameter drivers ÷ combined heating surface	710
Cylinder horsepower ÷ grate area	31.2

National Industrial Traffic League

THE National Industrial Traffic League held its annual meeting at Hotel Commodore, New York City, on Wednesday and Thursday of this week, with about 400 members in attendance. W. H. Chandler, of Boston, president of the league, occupied the chair, and J. H. Beek, of Chicago, executive secretary of the league, was secretary of the meeting.

The first day was taken up with the first two items on the program, revision of the constitution and an address by Hon. James C. Davis, director general of railroads, United States Railroad Administration. Mr. Davis gave a brief statistical statement of the work which has devolved on the railroad administration since the roads were relinquished by the government and explained, by way of reply to criticisms, the reasons for certain of his acts and decisions. He said, in part: The taking over and operation of the railroads by the federal government, as a measure necessary to the successful prosecution of the World War, was a unique proposition, and the liquidation of the innumerable liabilities and the adjustment of the many and complex controversies resulting is a fascinating story. It was probably the largest liquidation problem ever undertaken. The claims presented for adjustment may be roughly divided into the following classes: 1. Claims of the railroad corporations. 2. The innumerable claims of third persons growing out of the operation of the property. 3. Claims of freight shippers asking reparation. 4. Claims of the carriers for the use of their property.

The property included 250,000 miles of main track—188 large systems and more than 800 short lines. The gross earnings of the property for the calendar year 1917, just prior to federal control, were $4,050,463,579; net railway operating income, $974,778,937. Up to November 1, 1922, the total claims filed by the corporations on final settlement amounted to $958,924,305. Of these claims presented, $677,216,939 have been adjusted. The net amount paid in making these adjustments was $163,509,040.

The settlements so far concluded represent 75 per cent of the mileage under federal control. With the exception of one first class road, adjustments have been made or are still pending with all companies which have presented their claims. When you consider the extent of this property, the oportunity for controversy seems to be almost unlimited, and the adjustment of 75 per cent of the claims without recourse to the courts is a result that is worthy of special consideration. The notion that the railroads were returned to their owners in a much worse physical condition than when they were taken over is not borne out by the investigations made by the Railroad administration. The cost of labor and material greatly increased as between the test period and the period of government operation, but the vast expenditures of the United States Railroad Administration were made under the direct personal supervision of the men who during private ownership had charge of and operated these identical properties, and I believe it is a fair conclusion that the government did everything humanly possible to maintain the property in its possession at the same standard of maintenance established by the owners during private control. Immediately after federal control the railroads did the largest business in their history; if the roads were returned in a dilapidated condition, this result could not have been accomplished.

The railroads suffered serious damage as the result of federal control, but it was an economic rather than a physical damage. When returned they were being operated at a deficit, and were faced with the unpopular and difficult burden of asking an increase in rates and a reduction in wages.

Claims of Third Persons

The claims of third persons consist of an innumerable number of demands of employees and third persons, which may be generally described as based upon personal injuries, fires, and loss and damage. These claims are being adjusted through the agency of the corporations upon whose lines the claims originated. While much progress has been made there were still pending on July 1, 1922, over 14,500 law suits, involving an aggregate of $75,000,000.

Some criticism has arisen as to the attitude of the Railroad Administration in regard to the statute of limitations as to claims against the Administration. The Transportation Act provides that proceedings to enforce claims cannot be commenced after February 28, 1922. If a claim cannot be enforced by suit, it is quite clear that any payment made after the statute has run must be considered a voluntary payment, and I have held that, as a public officer, I cannot disburse public money in the way of voluntary payments. * * * Every one presenting a claim would insist that it was meritorious, and the Administration would at once be in the position of arbitrarily determining what in its opinion was a meritorious claim. The position of a public officer, in the matter of waiving statutory provisions is very different from the position of an individual or a private corporation under similar circumstances. While in some few instances the rule adopted by the Administration has worked an apparent injustice, there are a great flood of claims wholly without merit that have been disposed of, and I feel quite confident that any impartial survey of the situation will justify the conclusion adopted by the Administration.

There is one series of claims that is very unusual. In October, 1918, a great forest fire occurred in Minnesota. An area of some 1,500 square miles was burned over, and several

towns and cities were totally destroyed, notably the town of Cloquet, with a population of some 10,000.

Notwithstanding the fact that there were many fires originating in the burned over section entirely independent of railroad origin, and also notwithstanding the fact that during the period of the conflagration a hurricane was blowing at the rate of 60 miles an hour, the courts of Minnesota have held that if, as a matter of fact, it can be shown that a fire set by a railroad under federal control materially contributed to the conflagration which destroyed individual property, the Railroad Administration is liable. In the trial of some test cases, the jury found against the Railroad Administration, and the Supreme Court affirmed the verdicts.

As a result of this disaster, there were instituted over 10,000 law suits, making claim for an aggregate of some $50,000,000. Having exhausted the defenses which were available to the Administration in litigation, a final conclusion was reached to adjust the losses occurring in that portion of the burned area which was tributary to federally controlled railroads. Up to this time, some 4,000 of these cases have been adjusted, representing aggregate demands of some $20,000,000. The amount paid out, to date, is about $8,000,000, and the total cost to the Government, in completing these adjustments, will be from $15,000,000 to $20,000,000.

Reparation Claims

The adjustment of reparation claims has been the subject of some dissatisfaction. Claims growing out of the charge of unjust rates can be adjusted only after approval by the Interstate Commerce Commission. If the claim is on the informal docket, the approval is made on the recommendation of the Administration. If on the formal docket, the matter must be the occasion of an affirmative finding or order of the Commission requiring payment. * * * The formal awards made by the Commission many times involve quite difficult and complex questions of law. In many important controversies there are differences of opinion as between the members of the Commission, resulting often in dissenting opinions, and at times there is enough involved in doubtful controversies to justify asking the decree of a court, and the Railroad Administration has simply exercised a privilege always accorded carriers under private ownership, of submitting doubtful questions of law to the court. This privilege has been very sparingly exercised.

Since July 1, 1920, when the Railroad Administration commenced paying reparation awards direct, there has been received from the Commission 2,048 awards which have not been subsequently reopened by the Commission.

Of this total, there were 523 formal awards, of which payment has been authorized in 486 cases, involving total payment of $1,707,594. Payment of all the informal awards has been authorized, the total aggregating $1,014,705. There are at this time only 82 awards for which vouchers have not been drawn. Of these 55 are held pending an examination as to whether or not the claimant is indebted to any federally-controlled road. This investigation is required by the provisions of a federal statute. The remaining 37 awards are held pending investigation * * *. The final settlements with the railroads should be completed by say June 30, 1923, and the remaining outstanding matters should be substantially disposed of by the end of the calendar year 1923.

The federal control of railroads was undoubtedly a necessity as a war measure. Whether or not lessons of value were learned as a result of this venture may be the subject of difference of opinion and debate. The cost to the Government was very large. I believe, when the books are finally closed, it will aggregate approximately $1,800,000,000 to $2,000,000,000; $1,200,000,000 to $1,300,000,000 as the general loss by reason of the 26 months of operation, and $600,000,000 to $700,000,000, covering the six months' guaranty period and the adjustment with the deficit short line railroads.

Operating and Maintaining Oil-Burning Locomotives*

IN THE OPERATION of an oil-burning locomotive great attention should be given to avoiding sudden and great changes in fire-box temperatures. The fireman, by inattention in letting the steam drop back and then forcing the fire to bring the steam up again, not only wastes fuel but works a great hardship on the boiler. Owing to the rapidity with which the temperature can be dropped by cutting down the fire, it is of utmost importance to have the engine crew give special attention to the use of the dampers and handling of injectors or feed water heaters and the blower to prevent abuse of the boiler. In starting a train the locomotive burning oil can develop its maximum power without fear of holes being torn in the fire, but if care is not used in handling the oil-burning engine, this feature will adversely affect fuel economy by producing uneconomical acceleration.

The fuel oil should be heated to about 100 deg. F. in the tank to give the best results, although with the use of very heavy oils it has been necessary to heat the oil to 150 or 180 deg. F. Excessive heating damages the oil by driving off the lighter gases and causing the asphaltum to separate from the lighter oil. This makes the flow to the burner irregular and it is difficult to carry a light fire when drifting or standing.

Frequent sanding of the flues to prevent accumulation of soot promotes economy. Sanding should be done where there is no hazard of starting fires and when the engine is working under heavy conditions at a long cut-off. The intervals between sanding depend upon conditions of operation.

The operation of the firing valve and atomizer require close attention to take care of the varying boiler load, due to changing cut-off. Careful attention in the use of the atomizer and firing valve will eliminate black smoke, except where mechanical defects interfere. Heavy black smoke is not only a direct fuel loss, but rapidly deposits soot on the flues which interferes with the heat transfer to the boiler. A clear stack is deceiving. It may mean only a small amount of air, or it may mean as much as 300 per cent excess. A clear stack is ideal when the gas analysis at the same time shows a high percentage of carbon dioxide, a very low percentage of free oxygen and no carbon monoxide. Under operating conditions it is good practice to regulate the supply of air until a very light brown haze is shown at the stack, which will reduce the amount of excess air and thereby produce economy in the use of fuel. The presence of smoke does not always mean insufficient air. Poor atomization, poor mixture of air and oil, unconsumed oil striking cooling surface and poorly designed or bricked fire-pan frequently cause smoke when the air supply may be far in excess of that required.

Maintenance

Burners should have sufficient air admitted around them to prevent them from becoming heated to a temperature causing carbonization of the fuel at the mouth of the burner, resulting in deflecting the oil spray. The best results have been obtained with a burner located at a point from six to nine inches above the floor of the fire-pan.

The fire-pan should be free from all leaks, except the air openings provided for the combustion of fuel. Leaks in many cases cause the brick work to become loose. Permitting the brick to fall into the bottom of the fire-pan deflects the oil spray. Much can be accomplished in maintaining the brick work by having the fire-pan properly braced, eliminating vibration. Should any carbon be found on the flash-

* Abtsract of a report presented before the convention of the Traveling Engineers' Association.

wall, this should be removed to permit the oil spray to come in contact with a reasonably clean wall.

Both small and superheater flues should be inspected frequently, as there is a possibility of sand collecting in the large flues when leaks exist in the front end. Any restriction in the flues will affect superheating and evaporating efficiency.

The front end arrangement of an oil-burning locomotive is quite similar to that of a coal-burning locomotive, with the exception of the absence of the deflector plate and the necessary netting required to prevent cinders from emitting from the stack. The absence of netting permits of a freer flow of gases in the front end of oil-burning locomotives. If an oil-burning engine is properly drafted and the firebox properly bricked to prevent the localization of high temperatures, the cost of maintenance is about the same as that of a coal-burning engine.

Economic Advantages of An Oil-Burning Locomotive

In comparing the operation of an oil-burning locomotive with a coal burner, the locomotive burning oil has a number of distinct advantages: (1) Reduction in amount of smoke; (2) absence of cinders; (3) largest type of power can be operated without the mechanical stoker; (4) less loss of fuel at the stack; (5) hazard of starting fires along right-of-way reduced; (6) with careful handling the steam can be kept closer to the maximum boiler pressure without frequent or prolonged openings of the pop valve; (7) the fireman is permitted at all times to observe signal indications and operating rules; (8) the use of oil permits a more accurate check of the fuel consumption, which is of great value in compiling individual performance of enginemen, firemen and locomotives; (9) quicker turning of the power may be accomplished with the use of oil, also a reduction of terminal charges because of the reduction in hostler service and the elimination of ash-pit service; (10) better system and lower cost of fuel distribution through the use of pipe lines.

The use of oil is also conducive to longer locomotive runs, as for equal heat value oil occupies much less space than coal. Furthermore, oil when stored does not lose its calorific value as does coal, nor are there any difficulties arising from disintegration such as may be found when coal is stored.

The report is signed by J. N. Clark (Southern Pacific), chairman; J. C. Simino (Southern Pacific), J. C. Brennan (N. Y. C.), E. F. Boyle, W. G. Tawse (Superheater Co.), and Dumont Love (F. E. C.).

Discussion

The principal points brought out by the discussion were the necessity for care in firing up the oil-burning locomotive to avoid the risk of gas explosions in the fire-box, the value of the stack cover for retaining heat in the boiler when the locomotive is in the terminal and a doubt as to whether the risk of roadway fires is entirely eliminated by the use of oil as fuel.

The practice outlined to avoid explosions in firing up oil-burning locomotives, particularly when the fire is to be lighted in a hot firebox, is first to open the blower valve, open the fire door, then turn on the atomizer and finally open the oil valve after the burning waste for igniting the oil has been placed in the firebox. The blower and the open door permits a sufficient volume of air to pass through the firebox to prevent the accumulation of gas which may be formed in the hot firebox should the oil be slow in igniting.

The use of stack covers does not seem to be general practice although a number of roads use them to some extent. Instances were cited where, by the use of the stack cover, it has been possible to retain sufficient steam pressure in the boiler after from 8 to 12 hours in the roundhouse, to permit the engine to be fired up with its own steam in the atomizer.

L. D. Gillett (Dominion Railroad Commission of Canada) raised the question as to the fire hazard of oil-burning locomotives, stating that in Canada an investigation as the result of fires in oil-burning territory had developed the fact that burning tar has been thrown from the stack in quantities sufficient to set fire under favorable conditions, and that a change in the refinery process has eliminated the trouble. The discussion thus started brought out the need of supervision to insure that cigarettes or cigar stubs, pieces of waste, etc., be not thrown into the sandbox, and thence into the firebox, through the tubes and out the stack, only partially consumed, to set fire along the right-of-way and on the adjoining property. Through certain agricultural districts, where considerable grain is grown, the Southern Pacific uses netting in the front ends of its locomotives during the dry season as a precautionary measure against the small sparks thrown out when sanding the tubes. Although it is evident that fires can be set from oil-burning locomotives, the consensus of opinion of the members who have had experience with them, is that the risk is incomparably less than with coal-burning locomotives.

Oregon Wants More Railroads

WASHINGTON, D. C.

THE PUBLIC SERVICE COMMISSION of Oregon has filed a petition with the Interstate Commerce Commission, under paragraph 21 of section 1 of the interstate commerce act, asking it to order the Central Pacific, Southern Pacific, Oregon-Washington Railroad & Navigation Company, Oregon Short Line, Oregon Trunk and Deschutes railways or some one or more of them to extend and construct a line of railroad from Crane, Ore., westward to a connecting point that will give market outlets in California and western Oregon cities to eastern, central and southern Oregon, and to extend and construct connections therewith from the terminals of the present railroads at Kirk and at Bend, Ore., and that such further order be made giving such constructed lines such joint and common use of existing lines as will warrant such construction and thereby adequately serve the territory of eastern, central and southern Oregon and open it to the consuming markets of the East and the Pacific coast markets, ports and terminals. The petition also asks that such railroads be so grouped and such joint and common use be ordered as to assure maximum competition and maximum use of cars, equipment and facilities.

The petition says that there is no railroad extending southeastward from the western part of the state, south of Portland, to any point in eastern Oregon or to that part of southern Oregon lying east of the Cascade mountains; that the existing routes through the state are so circuitous that they constitute continual inconvenience to all inhabitants of the state and are particularly disadvantageous to the marketing of its products; that there is no adequate and efficient line from Lakeview, Klamath Falls, Crane, or Burns to Portland and that the public convenience and necessity require that an adequate and efficient line be constructed from Crane, Bend, Kirk and Eugene to Odell, from Crane to Burns, from Lakeview to Klamath Falls, or from Lakeview north to connect with the proposed Crane-Odell line.

The Oregon commission says that there exist practicable and feasible routes for these extensions and that surveys have been made and in some instances construction actually begun many years since but never completed.

After setting forth the resources of the region, the petition asserts that prompt and effective administration of the state government and the exercise of their duties by state and county officials require more direct routes between central and southeastern Oregon and the northwestern part of the state and that under existing conditions there has always been an annual car shortage in the territories described.

General News Department

The American Railway Association is to hold a special session at the Blackstone, Chicago, on Wednesday, December 6, to consider rules relative to distribution of freight cars and methods of securing observance of car service rules.

The regular monthly meeting of the Western Railway Club will be held at the Auditorium Hotel, Chicago, on Monday, November 20, at 7:30 p. m. Samuel O. Dunn, editor of the *Railway Age*, will speak on "Industry and the Man."

The Pennsylvania's grain elevator at Fifty-seventh and Leavitt streets, Chicago, was destroyed by fire on November 11 with an estimated loss to the building of approximately $200,000, in addition to which 100,000 bushels of oats were destroyed.

The annual meeting of the Telegraph and Telephone section of the A. R. A. will be held at the Hotel La Salle, Chicago, on December 12, 13, 14. This meeting was to have been held in Colorado Springs on September 19, 20, 21, but was postponed on account of railway conditions at that time.

The Chicago, Rock Island & Pacific and the Chicago Great Western, at a hearing held in Des Moines last week, were granted the right to appeal to the United States Supreme Court in their joint effort to prevent the State of Iowa from collecting property taxes based on the state's valuation. A temporary injunction was granted.

The Car Shortage is to be the subject of a debate to be held before the Transportation Club of Louisville, Ky., on Wednesday evening, November 22. T. B. Turner, assistant superintendent of transportation of the Louisville & Nashville, will speak for the railways, and J. Frederick Howard, traffic manager of Henry Knight & Son, for the shippers.

In a strike of freight handlers at the Waverly (N. J.) transfer of the Pennsylvania Railroad on Monday, November 13, about 250 men went out. Leaders of the workmen's brotherhood told New York reporters that a general sympathetic strike of freight handlers all around New York was in contemplation but so far as can be learned they have taken no serious action. The Pennsylvania has replaced the strikers with new men.

The Regan Safety Devices Company, New York city, announces that the installation of the Regan intermittent contact automatic train control apparatus on the Chicago, Rock Island & Pacific, throughout its Illinois division, 164 miles, double track, is to be begun immediately, with the expectation of completing the work in 100 working days. The directors of the railroad company on Tuesday, November 14, confirmed the decision, announced some time ago, to equip this portion of the Rock Island System in compliance with the order of the Interstate Commerce Commission. The apparatus is now being made at the Regan Company's factory at Niagara Falls, N. Y. That part of this train control system which is already installed, Blue Island, Ill., to Joliet, 25 miles, has been in service three years.

Automatic Train Control Order Modified

The Interstate Commerce Commission has modified its automatic train control order to provide that the Northern Pacific may instal automatic train stop or train control devices on one full passenger locomotive division between Mandan and Dickinson, N. D., in lieu of the installation required on the portion of its line designated in the original order, but the Northern Pacific's petition, in so far as it requests a modification of the order so as to permit of the use of an automatic train stop under the control of the engineman, who may, if alert, forestall automatic brake application and proceed, is denied. The commission has also denied a petition of the Chicago, Burlington & Quincy for a modification with respect to the extent of the installation required on its road, and also the joint petition of the New York Central, Boston & Albany, Cleveland, Cincinnati, Chicago & St. Louis, Michigan Central and the Pittsburgh & Lake Erie, asking a postponement of the date.

Conference on Numbering of Steel Called by A. E. S. C.

A conference to consider the desirability of providing a system of designating qualities or kinds of steels by code numbers, has been called by the American Engineering Standards Committee at the request of the U. S. Bureau of Standards. The conference will be held in Room 704, Department of Commerce Building, Nineteenth street and Pennsylvania avenue, Washington, D. C., at 10 a. m., Dec. 6. This conference will attempt to determine the desirability of applying a uniform numbering system to forging steels, casting steels, structural steels, including plates, tool steels or other steels not so classified.

Railway Development Association

The Fall meeting of the American Railway Development Association was held in Chicago, on November 9 and 10. W. W. Harris, editor of "American Railroads," in the absence of Ivy Lee of the Association of Railway Executives, opened the meeting with a talk on publicity, in which he pointed out the benefits to be derived from taking the public into confidence, especially by personal contact. On Friday morning, J. R. Howard, president of the American Farm Bureau Federation, spoke on the farmers' viewpoint on railroad questions. The afternoon sessions of both days were devoted to round table discussions.

Central Railway Club

The regular meeting of the Central Railway Club, Buffalo, N. Y., will be held on Thursday, November 23, at 2 p. m. The principal speaker will be F. W. Brazier, assistant to the general superintendent of rolling stock of the New York Central, who will read a paper on the training of men to act in supervisory capacities and on the best results in handling men.

At 7:30 p. m. in the Hotel Iroquois, the club will hold its annual dinner. There will be special entertainment features and the dinner will be followed by dancing.

A party of members of the New York Railroad Club plan going to Buffalo on a special car to start from the Grand Central Terminal at 8 p. m. on Wednesday.

The speakers at the dinner will be Ivy L. Lee of New York City and Reverend G. F. Williams of Buffalo.

Convention of Chief Interchange Car Inspectors' and Car Foremen's Association

The Chief Interchange Car Inspectors' and Car Foremen's Association held its annual convention at the Hotel Sherman, Chicago, on Thursday and Friday, November 9 and 10. In addition to the discussion of the changes in the rules of interchange which are to go into effect on January 1, papers on the following subjects were read and discussed: Lubrication of Car Journals, Suggestions for Changes in the Rules for Loading Long Material to Better Accommodate Certain Steel Products; The Maintenance of Tank Cars, and Car Department Apprenticeship System.

The following officers were elected for the coming year: President, A. Armstrong, Atlanta, Ga.; first vice-president, William Westall, New York Central; second vice-president, C. M. Hitch, B. & O.; secretary-treasurer, W. B. Elliott, Terminal Railroad Association of St. Louis.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1922

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1921.
Akron, Canton & Youngstown	Sept.	170	$171,668	$1,014	$182,756	$28,392	$18,605	$6,154	$61,761	$7,305	$122,217	66.90	$60,539	$50,539	$24,302	$51,341
	9 mos.	170	1,540,829	12,154	1,625,057	188,719	173,989	52,501	459,384	77,304	951,484	58.60	673,573	583,974	346,020	173,080
Alabama & Vicksburg	Sept.	141	135,749	58,659	214,447	49,268	34,116	6,716	105,875	11,226	209,233	97.60	5,214	—11,215	—5,495	68,015
	9 mos.	141	1,526,580	513,139	2,199,723	418,330	404,500	74,891	863,040	106,201	1,884,021	85.70	315,702	141,913	181,701	90,254
Vicksburg, Shreveport & Pac.	Sept.	171	170,233	83,472	277,918	56,494	54,113	8,057	122,249	12,647	256,028	92.10	21,890	4,283	—237	69,387
	9 mos.	171	1,665,292	811,535	2,671,738	479,048	465,338	89,166	1,058,879	122,098	2,234,934	83.70	436,804	265,678	196,908	259,560
Ann Arbor	Sept.	293	354,759	39,861	417,939	56,433	81,196	8,901	201,008	16,794	364,344	87.20	53,595	31,155	—9,890	83,884
	9 mos.	293	3,132,040	387,767	3,691,770	454,745	656,568	84,784	1,654,493	139,249	2,989,958	81.00	701,812	508,111	293,025	240,937
Atchison, Topeka & Santa Fe	Sept.	8,855	13,109,460	3,368,865	17,827,530	2,581,798	4,143,080	254,078	5,416,440	316,544	12,690,390	71.20	5,137,140	3,286,004	3,483,064	4,347,431
	9 mos.	8,856	91,270,749	31,613,034	133,794,999	23,160,408	31,471,939	2,363,825	42,348,419	2,989,499	102,145,456	76.30	31,649,543	21,029,754	22,241,504	32,760,959
Gulf, Colo. & Santa Fe	Sept.	1,907	1,771,086	387,245	2,292,687	308,095	495,576	44,876	683,007	69,394	1,597,574	69.70	695,113	611,255	566,993	476,429
	9 mos.	1,907	12,460,953	3,013,260	16,587,083	3,306,733	4,034,575	383,756	5,435,668	606,837	13,754,223	82.90	2,832,860	2,183,453	1,624,798	5,256,219
Panhandle & Santa Fe	Sept.	857	594,840	123,439	770,674	163,258	237,927	7,608	234,934	17,608	660,889	85.80	109,785	85,220	54,565	287,715
	9 mos.	857	4,164,085	1,032,234	5,567,051	1,463,791	1,682,159	63,091	1,837,993	169,540	5,208,895	93.60	358,156	154,307	—122,454	1,396,634
Atlanta & West Point	Sept.	93	139,330	75,430	242,266	30,823	44,669	8,852	85,446	10,413	183,201	75.60	59,065	41,442	31,071	38,144
	9 mos.	93	943,261	640,578	1,827,096	239,152	384,518	70,580	706,917	92,545	1,526,782	83.50	300,314	197,940	129,651	113,632
Western of Alabama	Sept.	133	152,965	72,285	249,671	28,841	45,254	9,004	79,004	10,186	174,802	70.00	74,869	52,877	55,998	51,770
	9 mos.	133	1,097,294	585,570	1,892,328	239,701	401,212	76,160	624,065	95,843	1,465,116	77.40	427,212	320,142	326,061	173,319
Atlanta, Birmingham & Atlantic	Sept.	639	287,417	49,268	363,719	61,684	84,397	20,593	167,106	14,406	348,256	95.70	15,463	5,085	11,369	—116,982
	9 mos.	639	2,276,436	349,503	2,859,061	529,826	778,674	189,448	1,437,125	142,815	3,078,643	107.60	—219,582	—347,123	—433,290	—1,421,910
Atlantic Coast Line	Sept.	4,926	3,687,072	1,098,469	5,266,434	648,806	1,184,689	93,085	2,030,445	132,116	4,109,983	78.00	1,156,451	806,205	1,024,367	12,977
	9 mos.	4,923	35,389,393	11,779,557	51,464,507	6,042,175	10,259,544	941,961	18,989,150	1,238,570	37,740,541	73.30	13,723,966	11,131,908	10,839,608	2,973,291
Charleston & West. Carol	Sept.	342	181,616	39,068	235,500	36,575	35,698	6,612	99,265	6,689	184,839	78.50	50,661	39,471	35,558	—2,657
	9 mos.	342	1,947,297	341,811	2,420,116	398,021	347,403	59,468	990,341	59,104	1,854,337	76.60	565,779	465,857	394,163	—230,181
Baltimore & Ohio	Sept.	5,235	10,047,537	2,270,586	13,619,379	1,900,308	5,570,386	273,334	7,006,166	458,749	15,331,852	112.60	—1,712,473	—2,333,060	—2,665,952	3,055,536
	9 mos.	5,235	110,224,998	19,908,533	140,346,795	17,405,677	33,729,538	2,655,449	58,852,411	4,256,096	118,167,188	84.20	22,179,607	15,852,342	12,491,220	15,271,197
Balti. & Ohio Chic. Term	Sept.	91	.....	.....	243,351	35,744	47,892	1,861	156,948	9,240	257,239	105.70	—13,888	—65,285	26,951	83,715
	9 mos.	91	.....	.....	2,241,513	322,587	296,006	16,919	1,292,754	92,260	2,062,828	92.00	178,685	—258,114	746,775	385,973
Staten Isl. Rapid Tran	Sept.	23	61,585	107,106	202,183	58,736	39,866	1,642	119,923	14,471	234,638	116.10	—32,455	—52,458	—65,434	—10,250
	9 mos.	23	675,112	949,121	1,850,415	469,619	297,530	17,432	1,064,563	122,913	1,972,047	106.60	—121,632	—277,343	—397,542	—213,422
Bangor & Aroostook	Sept.	625	345,176	77,717	445,375	131,412	131,917	3,797	156,067	18,613	443,794	99.60	1,581	—29,809	25,983	255,813
	9 mos.	625	4,844,786	666,602	5,717,373	1,124,839	1,117,266	35,551	1,627,618	173,421	4,089,960	71.50	1,627,413	1,212,616	1,350,770	629,491
Belt Ry. of Chicago	Sept.	32	.....	.....	529,693	54,858	53,961	2,199	246,378	9,319	366,715	69.20	162,978	127,723	123,848	129,103
	9 mos.	32	.....	.....	4,367,086	426,007	432,661	19,229	1,963,118	87,492	2,928,507	67.10	1,438,579	1,121,749	1,219,677	1,201,541
Bessemer & Lake Erie	Sept.	225	1,829,830	36,876	1,892,209	100,265	343,447	13,399	517,791	26,364	1,008,346	53.30	883,863	864,603	963,313	432,911
	9 mos.	225	9,065,105	292,423	9,555,981	988,741	2,786,580	132,965	3,033,871	231,463	7,221,127	75.60	2,334,854	2,054,260	2,398,941	1,492,594
Bingham & Garfield	Sept.	34	28,172	.....	28,072	15,651	5,378	1,662	4,253	4,096	31,101	110.80	—3,029	—5,629	7,465	—30,778
	9 mos.	34	151,660	859	154,234	144,842	33,681	12,285	44,451	37,922	273,720	177.50	—119,486	—161,598	—65,048	—210,330
Boston & Maine	Sept.	2,287	4,043,329	2,240,317	7,072,244	1,041,400	1,612,067	49,512	3,024,860	188,001	5,954,201	84.20	1,118,043	864,875	549,650	772,803
	9 mos.	2,287	35,100,637	17,053,482	58,474,927	8,762,298	11,445,613	490,997	26,252,788	1,918,886	49,112,772	84.00	9,362,155	7,496,030	5,124,865	—2,206,699
Brooklyn Eastern Dist. Term	Sept.	9	116,887	.....	124,471	5,014	13,773	74	52,325	4,245	75,431	60.60	49,040	42,828	42,828	27,480
	9 mos.	9	1,116,011	.....	1,186,194	50,840	159,731	1,394	449,002	43,054	704,021	59.40	482,173	424,211	424,211	229,879
Buffalo & Susquehanna	Sept.	253	164,410	4,280	172,415	33,612	45,809	1,774	58,194	8,452	147,841	85.70	24,574	17,996	60,644	23,699
	9 mos.	253	951,984	50,425	1,037,772	285,578	324,739	18,989	389,423	80,541	1,099,270	105.90	—61,498	—94,120	60,972	—40,934
Buffalo, Rochester & Pittsburgh	Sept.	589	1,207,726	145,654	1,432,276	275,540	675,536	18,280	640,150	42,922	1,654,931	115.50	—222,655	—257,691	—177,813	32,162
	9 mos.	589	8,470,409	1,232,515	10,247,301	1,685,824	4,135,688	167,194	4,300,237	347,318	10,656,474	104.00	—409,173	—729,193	—376,546	475,773
Canadian Pacific (Lines in Me.)	Sept.	233	108,967	27,760	152,504	30,178	33,377	4,587	80,315	3,387	151,844	99.60	660	—15,340	—19,559	—33,948
	9 mos.	233	1,510,071	301,726	1,952,722	320,861	380,131	38,889	948,103	33,658	1,721,642	88.20	231,080	87,080	—5,975	—141,155
Carolina, Clinchfield & Ohio	Sept.	295	522,494	42,166	578,914	67,992	136,564	16,073	167,704	20,850	408,904	70.60	170,010	114,905	178,807	253,088
	9 mos.	295	5,196,731	352,001	5,660,343	663,536	1,205,915	194,970	1,432,526	174,590	3,668,547	64.80	1,991,796	1,606,147	2,261,339	1,674,778
Central of Georgia	Sept.	1,920	1,438,768	430,630	2,088,289	264,304	400,000	59,559	731,376	69,972	1,529,496	73.20	558,793	444,632	474,837	249,217
	9 mos.	1,918	11,285,359	3,763,227	16,719,217	2,209,270	3,193,119	585,181	6,386,790	666,987	13,097,196	78.30	3,622,021	2,761,869	2,943,996	611,472
Central of New Jersey	Sept.	688	3,020,737	955,501	4,270,335	513,116	830,471	37,870	1,909,586	103,134	3,413,058	79.90	857,277	620,530	601,931	710,132
	9 mos.	688	25,192,424	7,338,060	34,952,975	4,117,456	9,048,872	307,838	15,284,257	936,364	29,852,129	85.40	5,100,846	2,772,143	2,449,013	5,781,293
Central Vermont	Sept.	532	469,151	122,976	658,461	85,273	93,984	16,474	326,579	19,563	542,854	82.40	115,607	98,036	61,479	97,298
	9 mos.	532	3,745,359	924,900	5,215,322	810,576	851,151	116,399	2,674,694	207,764	4,673,140	89.60	542,182	383,107	134,949	—950,274
Chesapeake & Ohio	Sept.	2,550	4,519,157	992,952	5,874,732	872,499	2,201,066	72,932	2,352,155	162,348	5,693,434	96.90	181,298	—86,539	—74,853	1,386,457
	9 mos.	2,548	51,516,235	7,899,945	62,504,957	7,771,662	15,876,383	701,417	22,383,925	1,437,129	48,385,672	77.40	14,119,285	11,702,843	12,064,253	9,265,419
Chicago & Alton	Sept.	1,050	1,102,266	498,841	1,811,615	319,102	597,740	53,592	988,537	54,368	2,022,691	111.70	—211,076	—287,135	—360,458	412,189
	9 mos.	1,050	13,443,004	4,540,947	19,697,110	2,661,392	5,466,676	501,088	8,247,076	509,160	17,480,010	88.70	2,217,100	1,537,834	476,112	1,021,666
Chicago & Eastern Ill	Sept.	945	1,497,464	396,145	2,062,688	236,716	562,977	37,644	925,592	62,032	1,835,691	89.00	226,997	116,684	225,182	619,597
	9 mos.	945	12,839,735	3,403,280	17,565,066	2,122,248	4,526,741	379,568	7,498,497	588,873	15,213,147	86.60	2,351,919	1,527,970	1,460,273	1,073,575
Chicago & North Western	Sept.	8,403	9,172,705	2,385,528	13,189,311	1,754,576	2,992,533	148,724	5,627,309	308,122	10,888,021	82.60	2,301,290	1,470,428	1,174,897	2,578,140
	9 mos.	8,403	72,181,524	22,261,631	106,391,636	14,153,017	21,253,032	1,368,009	46,152,800	2,793,947	86,328,362	81.10	20,063,274	13,372,025	12,735,532	4,614,136
Chicago, Burlington & Quincy	Sept.	9,393	11,464,423	2,643,361	15,398,172	2,328,667	3,788,267	170,268	6,359,354	359,425	13,097,432	85.10	2,300,740	1,273,012	1,130,024	3,151,750
	9 mos.	9,393	85,172,533	21,229,831	117,145,301	15,772,987	24,729,975	1,721,543	45,438,928	3,143,105	91,531,737	78.10	25,613,564	17,218,753	15,890,297	21,159,587
Chicago Great Western	Sept.	1,496	1,564,834	386,576	2,137,762	339,983	505,323	58,836	920,680	50,987	1,891,385	88.50	246,377	164,396	5,143	205,478
	9 mos.	1,496	12,780,319	3,235,393	17,580,178	2,880,425	3,969,096	572,050	7,479,017	498,848	15,520,487	88.30	2,059,691	1,329,842	128,689	1,059,040

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1922—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1921.
Chicago, Ind. & Louisville	Sept.	654	937,802	262,115	1,347,675	138,788	296,166	32,224	530,134	33,023	1,046,825	77.70	300,850	239,889	112,001	222,234
	9 mos.	654	8,202,237	2,273,070	11,587,330	1,239,043	2,519,899	292,912	4,391,523	315,041	8,884,800	76.70	2,702,530	2,134,716	1,196,256	497,574
Chicago, Milwaukee & St. Paul	Sept.	11,030	10,650,438	2,229,761	14,421,141	1,957,446	2,800,147	177,827	6,286,120	294,050	11,592,955	80.40	2,828,186	1,977,888	1,564,107	2,381,828
	9 mos.	11,030	82,189,764	18,211,941	112,545,176	15,094,135	25,322,987	1,667,738	48,324,183	2,870,002	93,858,687	83.40	18,686,489	11,329,833	7,981,071	2,570,746
Chicago, Peoria & St. Louis	Sept.	246	103,560	15,494	130,169	21,239	21,575	4,362	78,934	10,962	137,072	105.30	—6,903	—17,803	—38,046	—15,731
	9 mos.	246	1,299,605	165,897	1,569,610	255,547	306,420	39,679	930,393	95,001	1,627,040	103.70	—57,430	—144,529	—361,275	—428,074
Chicago River & Indiana	Sept.	38	.....	.....	540,474	62,586	70,463	723	215,387	11,175	360,333	66.67	180,141	142,239	227,498	.....
	9 mos.	38	.....	.....	2,458,331	264,052	262,506	3,031	951,510	40,599	1,531,698	62.31	926,633	740,651	1,006,893	.....
Chicago, Rock Isl. & Pac.	Sept.	7,661	7,387,249	2,447,150	10,689,360	1,228,771	2,267,483	173,225	4,445,692	235,757	8,450,365	78.70	2,279,895	1,737,195	1,448,740	2,287,153
	9 mos.	7,661	66,951,926	20,009,864	87,592,818	10,992,477	18,268,979	1,599,426	37,179,131	2,066,607	70,538,014	80.50	17,054,804	13,225,192	9,664,466	10,978,090
Chic., Rock Isl. & Gulf	Sept.	461	407,011	82,281	524,574	91,390	70,627	12,717	218,230	12,943	405,970	77.40	118,604	105,587	96,102	213,829
	9 mos.	461	3,251,503	700,083	4,307,758	643,307	660,624	120,455	1,823,786	123,305	3,877,945	90.00	829,813	721,720	558,586	1,064,749
Chic., St. Paul, Minn. & Omaha	Sept.	1,749	1,788,123	518,952	2,497,933	365,191	471,758	33,750	1,063,278	69,092	2,012,291	80.60	485,642	345,336	233,195	594,334
	9 mos.	1,749	14,497,221	4,597,102	20,608,862	2,662,148	3,576,867	300,610	9,297,771	644,110	16,566,646	80.40	4,042,816	2,842,389	2,551,374	837,986
Cincin., Indianapolis & Western	Sept.	347	283,598	41,871	348,541	50,909	75,117	10,355	140,868	19,148	296,475	85.00	52,066	32,477	8,277	—69,836
	9 mos.	347	2,480,212	417,672	3,078,002	403,449	657,077	99,706	1,349,143	176,073	2,704,043	87.90	373,959	232,390	36,711	—662,346
Colorado & Southern	Sept.	1,099	907,985	208,345	1,198,658	208,614	281,588	16,769	446,790	42,268	1,005,510	83.90	193,148	124,398	73,219	300,981
	9 mos.	1,099	7,349,657	1,556,745	9,618,461	1,405,740	2,015,516	123,944	3,540,384	394,001	7,553,496	78.50	2,064,965	1,463,770	1,160,457	1,293,818
Ft. Worth & Denver City	Sept.	456	593,524	216,527	865,463	82,790	233,922	9,449	274,412	32,904	641,958	74.20	223,505	172,536	150,457	351,573
	9 mos.	456	4,777,370	1,688,039	6,895,510	581,022	1,318,661	104,373	2,225,873	318,225	4,593,847	66.60	2,301,663	1,920,946	1,842,289	2,515,116
Wichita Valley	Sept.	256	86,553	25,524	121,542	19,909	14,839	44	47,623	1,360	83,603	68.80	37,939	29,197	9,365	29,822
	9 mos.	256	616,936	199,674	882,182	180,272	75,440	398	377,372	12,939	642,850	72.90	239,332	182,553	78,678	212,102
Columbus & Greenville	Sept.	167	100,480	32,796	140,774	31,582	11,989	2,428	43,423	8,308	97,730	69.40	43 044	37,585	25,338	—3,567
	9 mos.	199	818,737	250,322	1,124,470	259,379	105,232	29,192	412,143	77,417	883,310	78.50	241,160	196,560	89,528	—438,391
Delaware & Hudson	Sept.	887	2,241,738	474,423	2,971,904	351,973	1,165,990	52,694	1,283,651	147,524	3,031,411	102.00	—59,507	—145,197	—162.569	612,356
	9 mos.	887	20,964,792	2,966,803	26,459,641	4,065.635	7,655,503	399,375	11,126,901	1,318,018	24,996,294	94.50	1,463,347	683,808	626.001	5,570,388
Delaware, Lack. & Western	Sept.	994	4,403,345	1,371,009	6,564,549	711,462	2,002,800	113,778	3,055,744	152,825	6,090,514	92.80	474,035	97,490	129,339	1,930,927
	9 mos.	994	36,537,496	10,530,749	53,770,523	6,263,372	12,454,417	1,025.193	23,895,259	1,420,385	45,531,748	84.70	8,238,775	4.545,501	5,058,501	9,825,096
Denver & Rio Grande Western	Sept.	2,593	2,515,575	551,567	3,328,741	548,596	713,430	46,105	1,148,154	76,785	2,585,652	77.70	743,089	575,840	559.055	594,784
	9 mos.	2,593	17,623,136	4,317,300	23,820,965	3,619,667	4,620,043	408,332	7,910,660	746.737	17,747,636	74.50	6,073,329	4,631,890	4,904,954	2,316,651
Denver & Salt Lake	Sept.	255	141,428	24,289	179,737	66.215	59,759	1,247	59,230	5,987	192,438	107.10	—12,701	—21,701	—18.049	31,478
	9 mos.	255	713,851	156.746	945.214	384.000	265.191	8.944	336.148	53,880	1.048.163	110.90	—102,949	—183.979	—162,789	—69,838
Detroit & Mackinac	Sept.	385	146,276	31,785	192,398	17,258	47,799	1,524	58,255	8,504	133,277	69.30	59,121	48,713	47,513	22,637
	9 mos.	385	1,014,864	269,601	1,390,338	224,708	456,056	20,489	524,955	51,488	1,276,868	91.80	113,470	20,704	6.522	42,331
Detroit & Toledo Shore Line	Sept.	61	289,874	.....	293,483	32.503	28,154	2,205	95.162	7,479	165,503	56.30	127,980	100,993	25,653	89,979
	9 mos.	61	2,566,290	.....	2.590,833	252.209	194,918	20,448	725,697	64,922	1,258,194	48.60	1.332,639	1,193,580	633,666	364,265
Detroit, Toledo & Ironton	Sept.	454	640,085	11,840	666,139	262,919	271,580	7,101	322,607	22,989	887.196	133.20	—221,057	—233,982	—383,097	—91,761
	9 mos.	454	6,493,788	93,479	6,687,749	1,283,395	1,657,713	52,874	2,385,446	178,747	5,557,756	83.10	1,129,993	1,016,301	5.650	352,447
Duluth & Iron Range	Sept.	278	732,919	17,394	811.117	121,665	130,470	1,809	211,825	21,002	487,270	60.10	323,847	264.156	267,406	290,732
	9 mos.	281	5,018,167	145,270	5,584,337	870,610	884,651	11,356	1,517,283	159,328	3,445,429	61.70	2,138,908	1,745.042	1,767,246	604,001
Duluth, Miss. & Northern	Sept.	307	1,954,223	35,840	2,160,036	198,095	211,929	2,948	406,626	19,084	840,355	38.90	1,319,681	1,186,580	1,179,036	1,243,773
	9 mos.	306	10,704,451	341,830	11,912,194	1,899,381	1,305,039	28,668	2,555,646	177,971	5,583,198	46.90	6,329,996	5,182,254	5,153,612	3,809,623
Duluth, South Shore & Atlantic	Sept.	591	250,197	100,437	398,516	65,122	25,459	6,424	187,762	11,567	301,561	75.70	96,955	63,953	57,725	35,060
	9 mos.	591	2,117,964	790,070	3,237,120	573,538	488,278	59,175	1,658,380	101,594	2,928,801	90.50	308,319	23,047	—15,023	—467,017
Duluth, Winnipeg & Pacific	Sept.	178	136,338	22,535	162,576	32,767	44,058	3,360	71,532	5,903	157,620	97.00	4,956	—4,786	—9,083	—65,041
	9 mos.	178	1,242,332	182,149	1,471,710	271,555	375,320	38,395	657,623	49,105	1,391,974	94.60	79,736	—1,155	—27,650	—105,312
Elgin, Joliet & Eastern	Sept.	459	1,541,908	5	1,707,341	193,998	295,114	11,253	573,205	34,497	1,107,394	64.90	599,947	511,613	398,326	169,194
	9 mos.	459	13,402,203	40	15,044,516	1,328,535	2,690,048	109,520	4,865,505	306,284	9,297,090	61.80	5,747,426	4,959,265	3,880,168	2,009,865
El Paso & Southwestern	Sept.	1,139	757,753	134,895	964,070	158,420	141,883	26,241	234,831	65,334	634,824	65.80	329,246	258,241	279,230	106,615
	9 mos.	1,139	6,393,046	1,431,572	8,348,969	1,384,295	1,295,915	251,357	2,176,331	443,322	5,622,703	67.30	2,726,266	1,886,468	1.671.730	789,729
Erie	Sept.	2,039	5,543,722	1,137,781	7,380,297	1,206.370	3,118,756	130,[illegible]	3,071,411	284,462	8,761.508	118.70	—1,381,211	—1.676,119	—1,496.974	1,074,294
	9 mos.	2,039	50,436,239	10,051,433	66,083,455	8,065.034	21,539,079	1,210,067	30,987,274	2,555,721	64,742,392	98.00	1,341,063	—1.149.941	100.866	4,010,890
Chicago & Erie	Sept.	269	770,804	71,172	897,748	153.251	218,364	17,110	414,295	30,738	833.030	92.80	64.718	9 715	—293.935	—258,169
	9 mos.	269	7.002,533	538,008	8,118,388	983.894	1,414,712	174.015	3,595,414	304,153	6,472,707	79.70	1,645.681	1,162,287	—1,358 154	—2,073,500
New Jersey & New York	Sept.	45	16,150	105,498	126,906	18.514	30,388	1,235	74,340	4,193	128,670	101.40	—1,764	—4,764	—31.908	—6.474
	9 mos.	45	165,677	908,569	1,118,687	141,241	186,523	11.935	628,746	30,677	999,119	89.30	119,568	92,346	—140.449	—115,047
N. Y., Susq. & Western	Sept.	135	224,199	63,093	325,747	46,849	69,754	3.411	231,343	11,081	362.435	111.30	—36,688	—62,218	—72,079	—26.880
	9 mos.	135	2,005,679	554,711	2.933,026	418,153	539,038	31,904	1,797,843	89,507	2,876,568	98.10	56,458	—171,486	—284,854	—45.365
Florida East Coast	Sept.	764	482,135	177,912	758,584	210,870	240,461	13,667	288,447	34,903	793.536	104.60	—34,952	—110,465	—135.245	—260.918
	9 mos.	764	6,044,246	2.948,600	10 213,238	1.641,925	1,767,612	119.448	3,166,161	252.519	7.037,463	68.90	3,175,775	2.596,704	2.176.401	892,190
Ft. Smith & Western	Sept.	249	119,706	27,585	156,980	28,466	22,968	4,821	49,125	6,628	112,651	71.80	44,329	37,903	28,018	3.923
	9 mos.	249	883,895	208,223	1,174,984	232,832	214,213	43,036	414,617	61,792	973,851	82.90	201,133	147.413	71.440	—120,388
Galveston Wharf	Sept.	13	.....	.....	142,157	32,499	2,875	613	31,934	9,865	93,756	66.00	48,401	30,269	30,731	38,076
	9 mos.	13	.....	.....	1 071,982	440,343	33,312	6,933	250,224	36.856	919,198	85.70	152.784	—1.362	74	816,868
Georgia	Sept.	328	313,266	110,451	456.034	41,471	91,457	21,284	218.559	18.437	391,436	85.80	64,598	57,490	56,437	89,296
	9 mos.	328	2,515,605	889,338	3,684,841	365,991	644,552	177,590	1,789,907	172,735	3,152,692	85.60	532,149	463,755	476,802	72,187
Georgia & Florida	Sept.	405	89,006	16,312	112,410	15,420	16,019	7,492	40,711	5,868	85,722	76.30	26,688	20,413	16,437	—2,092
	9 mos.	405	799,285	116,057	982,857	150,600	152,134	73,007	391,836	57,083	826,584	84.10	156,273	99,462	38,133	—188,177

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1922—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1921.
						Maintenance of										
			Freight.	Passenger.	Total (inc. misc.)	Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.					
Grand Trunk Western	Sept.	347	1,172,617	190,916	1,444,764	171,617	347,904	247,859	4,847,374	449,011	9,419,006	77.80	2,686,409	2,071,006	475,562	—853,297
	9 mos.	347	9,963,661	1,447,307	12,105,415	1,198,535	2,620,449	556	97,452	12,266	227,188	103.30	—7,282	—24,182	—73,629	—202,252
Atlantic & St. Laurence	Sept.	166	143,249	54,421	219,906	85,093	30,776	43,201	1,081,984	107,870	2,063,411	102.30	—45,867	—201,184	—753,854	—1,116,036
	9 mos.	166	1,497,163	353,576	2,017,544	524,547	289,238	3,280	71,008	3,387	115,174	85.10	20,112	8,801	—2,084	6,206
Chic., Det. & Can. Gr. Tr. Jct.	Sept.	59	116,244	6,786	135,286	22,263	15,268	31,510	594,519	31,976	895,327	55.00	733,517	643,979	482,919	198,181
	9 mos.	59	1,410,208	78,010	1,628,844	125,092	112,365	7,799	222,718	15,827	371,338	91.00	36,732	33,004	—16,573	—130,753
Det., Gr. Haven & Milwaukee	Sept.	189	353,153	17,687	408,070	65,332	59,599	77,411	1,890,924	145,404	2,965,215	77.00	885,972	835,692	261,639	—541,673
	9 mos.	189	3,243,144	334,041	3,851,187	425,518	423,354	127,063	4,287,015	187,195	8,513,250	76.10	2,666,889	1,823,783	1,836,120	3,218,755
Great Northern	Sept.	8,255	8,789,972	1,402,606	11,180,139	1,208,872	2,682,781	1,230,383	29,508,053	1,878,785	57,353,743	78.80	15,456,331	9,449,381	10,084,242	4,212,635
	9 mos.	8,262	54,258,092	11,133,461	72,810,074	9,989,573	14,307,141	2,447	42,577	2,383	84,554	80.20	20,796	12,485	9,268	11,673
Green Bay & Western	Sept.	262	84,044	12,310	105,350	20,450	16,746	21,635	387,098	23,537	770,233	76.10	241,023	168,712	130,923	97,095
	9 mos.	262	792,715	143,170	1,011,256	193,033	145,002	25,832	239,588	32,176	553,272	63.40	319,146	279,471	285,812	343,036
Gulf Coast Lines	Sept.	...	637,851	166,799	872,418	137,283	119,616	237,845	2,109,988	314,314	5,160,741	67.40	2,462,862	2,118,449	2,023,354	2,493,206
	9 mos.	...	5,711,238	1,405,199	7,623,603	1,228,504	1,181,089	7,102	80,799	11,683	189,615	70.90	77,801	59,897	59,187	43,008
Gulf & Ship Island	Sept.	307	211,132	40,409	267,416	48,016	41,710	68,685	675,781	103,995	1,580,445	71.30	635,800	474,142	433,275	155,975
	9 mos.	307	1,727,924	351,132	2,216,245	393,890	334,963	14,155	114,371	14,618	268,722	74.90	90,053	52,908	46,427	27,276
Gulf, Mobile & Northern	Sept.	436	312,760	30,852	358,775	51,223	74,355	125,179	1,123,637	138,444	2,414,484	73.80	855,903	665,483	546,809	—35,917
	9 mos.	436	2,831,232	303,618	3,270,387	488,510	547,980	10,770	467,681	29,682	1,141,502	84.30	213,370	127,452	147,257	296,942
Hocking Valley	Sept.	348	1,144,970	100,800	1,354,872	134,466	499,126	103,900	3,331,029	277,659	7,108,947	73.50	2,561,948	1,758,309	1,854,329	313,952
	9 mos.	348	8,048,789	779,624	9,670,895	990,225	2,416,767	180,299	5,175,157	283,896	11,292,937	76.80	3,417,412	2,459,669	2,480,288	1,490,926
Illinois Central	Sept.	4,784	11,674,270	2,118,524	14,710,349	2,066,057	3,545,201	1,669,075	40,348,099	2,743,420	84,841,304	76.80	25,586,704	17,218,620	17,623,366	13,685,148
	9 mos.	4,784	85,066,454	17,610,585	110,428,008	14,347,951	25,355,262	24,841	640,640	45,321	1,515,792	82.40	324,405	206,494	196,724	113,960
Yazoo & Miss. Valley	Sept.	1,380	1,387,817	343,409	1,840,197	437,531	365,206	232,172	5,537,859	436,891	12,145,378	89.40	1,443,265	378,613	348,298	135,516
	9 mos.	1,381	9,924,067	2,829,602	13,588,643	3,207,117	2,742,282	26,148	564,658	45,488	1,137,306	76.20	357,063	322,483	245,483	75,457
International & Gr. Northern	Sept.	1,159	1,163,930	218,117	1,494,369	225,817	271,451	238,121	4,538,297	422,172	8,598,130	83.00	1,764,444	1,457,609	988,747	—214,549
	9 mos.	1,159	7,435,378	1,844,021	10,362,574	1,520,513	1,828,716	4,603	54,541	5,504	108,621	93.50	7,565	—755	—3,749	—5,361
Kans. City, Mexico & Orient	Sept.	272	99,404	9,117	116,186	28,171	15,803	41,954	539,031	56,635	1,077,422	107.00	—70,409	—143,457	—149,469	—205,245
	9 mos.	272	839,858	93,200	1,007,013	228,654	211,148	5,210	58,801	8,295	109,553	97.20	3,099	—3,381	—20,044	—30,375
Kans. City, Mex. & Orient of Tex.	Sept.	465	92,921	12,546	112,652	21,092	16,155	42,394	644,929	60,101	1,238,908	114.70	—158,459	—213,265	—343,368	—538,696
	9 mos.	465	917,636	96,823	1,080,449	218,959	272,525	37,157	545,989	61,794	1,218,039	76.60	372,290	277,051	231,971	332,718
Kansas City Southern	Sept.	767	1,303,720	170,688	1,590,329	198,674	374,095	327,033	4,756,954	608,996	10,085,476	76.30	3,125,450	2,253,965	2,103,847	3,189,419
	9 mos.	767	10,496,570	1,491,361	13,210,926	1,730,733	2,667,858	4,930	51,058	8,248	101,636	53.10	89,595	78,676	62,778	50,264
Texarkana & Ft. Smith	Sept.	81	160,842	13,699	191,231	16,359	21,044	46,467	450,973	77,864	907,999	59.90	606,940	510,991	364,570	311,739
	9 mos.	81	1,255,934	129,172	1,514,939	158,559	175,071	5,388	85,075	10,637	170,495	64.40	94,072	84,492	66,822	11,308
Kans., Okla. & Gulf	Sept.	314	241,964	11,955	264,567	47,764	21,397	49,079	749,844	90,793	1,499,579	71.80	587,616	498,979	385,683	—86,008
	9 mos.	314	1,894,988	109,441	2,087,195	399,151	209,153	284	36,647	2,462	72,933	45.10	88,806	83,320	87,129	51,594
Lake Superior & Ishpeming	Sept.	33	136,286	56	161,739	23,125	10,415	1,978	195,110	23,223	489,644	54.60	407,821	357,035	367,559	—200,182
	9 mos.	33	751,881	604	897,465	184,278	85,055	.....	53,973	1,876	76,116	113.20	—8,853	—12,994	—5,626	18,775
Lake Terminal	Sept.	13	.....	.....	67,263	7,720	12,547	.....	392,057	14,837	578,398	74.20	200,590	150,053	219,454	71,471
	9 mos.	13	.....	.....	778,988	82,002	89,502	1,410	104,697	8,215	172,796	93.00	12,907	729	—10,401	27,234
Lehigh & Hudson River	Sept.	96	170,707	4,071	185,703	23,680	34,794	13,215	773,327	69,581	1,407,529	83.30	282,106	160,884	11,912	316,237
	9 mos.	96	1,561,613	35,358	1,689,635	241,044	310,407	6,498	150,040	14,606	282,607	72.80	105,339	98,694	91,959	140,154
Lehigh & New England	Sept.	235	378,684	1,735	387,946	61,340	50,123	86,898	1,090,424	144,274	2,668,380	92.60	213,290	130,484	203,239	771,776
	9 mos.	236	2,799,209	17,006	2,881,670	491,839	855,643	24,130	526,326	50,429	1,126,542	78.00	318,222	240,939	141,887	—97,257
Lehigh Valley	Sept.	1,335	4,518,596	729,119	5,656,065	727,977	2,117,236	100,192	2,669,215	60,681	5,702,200	100.80	—46,135	—121,648	—295,976	1,571,287
	9 mos.	1,334	37,054,467	5,339,475	45,833,132	5,386,797	13,982,181	948,545	21,225,256	1,136,892	42,895,218	93.60	2,937,914	1,269,263	740,832	2,713,299
Los Angeles & Salt Lake	Sept.	1,137	1,023,660	476,462	1,634,700	349,473	421,165	40,926	546,839	41,240	1,452,167	88.80	182,533	70,070	38,396	72,588
	9 mos.	1,140	9,082,238	3,917,214	14,253,008	2,992,050	3,166,077	423,166	4,697,069	382,544	12,076,857	84.70	2,176,151	1,177,599	830,492	896,300
Louisiana & Arkansas	Sept.	302	201,212	27,784	237,253	51,849	30,358	7,660	78,036	8,907	176,404	74.40	60,849	38,281	41,435	81,147
	9 mos.	302	2,085,776	290,916	2,443,655	479,328	339,014	68,632	751,305	74,567	1,798,241	69.90	735,414	541,299	531,765	200,063
Louisiana Ry. & Nav. Co.	Sept.	343	274,893	33,604	323,197	75,293	39,237	10,077	110,379	10,893	245,845	76.00	77,352	61,046	29,147	71,916
	9 mos.	343	2,090,820	274,790	2,491,775	577,983	356,058	93,282	983,975	103,692	2,113,938	84.80	377,837	231,080	5,781	275,531
Louisville & Nashville	Sept.	5,038	6,813,236	2,048,082	9,534,463	1,405,797	2,649,936	208,473	3,689,029	202,528	8,201,409	86.00	1,333,054	1,026,229	1,279,741	1,479,048
	9 mos.	5,038	67,793,397	16,668,465	90,134,839	12,901,134	22,724,386	1,903,963	34,286,114	2,034,357	74,234,359	82.40	15,900,480	12,504,423	12,963,167	991,293
Louisville, Henderson & St. Louis	Sept.	199	196,185	56,847	311,723	74,458	19,370	5,836	91,273	8,028	198,965	63.80	112,758	90,077	78,170	50,053
	9 mos.	199	1,708,209	531,507	2,424,134	481,086	297,881	55,655	818,436	74,403	1,727,461	71.30	696,673	576,033	442,487	197,291
Maine Central	Sept.	1,194	1,157,842	463,735	1,762,208	278,113	298,063	14,128	771,331	47,768	1,415,233	80.30	346,975	259,314	280,782	215,088
	9 mos.	1,194	10,577,142	3,533,821	15,269,304	2,460,832	2,864,580	121,708	6,666,842	421,282	12,562,205	82.30	2,707,099	1,848,235	1,868,545	—467,530
Midland Valley	Sept.	383	317,250	74,790	408,462	80,298	45,000	5,181	116,885	14,243	261,563	64.00	146,899	130,115	120,020	103,527
	9 mos.	383	2,626,375	629,966	3,402,646	515,765	403,871	43,731	1,019,061	133,485	2,107,297	61.90	1,295,349	1,163,240	1,069,101	529,958
Minneapolis & St. Louis	Sept.	1,649	1,115,569	156,211	1,344,801	177,842	222,822	23,014	672,241	37,308	1,132,707	84.20	212,093	137,084	101,315	119,803
	9 mos.	1,649	9,286,297	1,377,560	11,285,759	1,586,412	1,991,158	213,352	5,355,869	353,926	9,498,677	84.20	1,787,081	1,184,599	719,466	—438,057
Minn., St. Paul & S. Ste. Marie	Sept.	4,383	4,117,794	724,370	5,253,092	621,457	662,028	64,044	1,904,548	108,142	3,382,115	64.40	1,870,977	1,622,373	1,562,179	808,304
	9 mos.	4,383	24,667,210	5,503,369	33,296,947	4,926,611	5,205,941	550,584	14,032,165	934,141	25,751,191	77.30	7,545,756	5,268,487	4,894,260	—1,484,180
Mississippi Central	Sept.	258	106,804	18,171	130,588	23,008	24,090	5,899	44,945	6,554	104,496	80.00	26,092	19,847	25,098	12,512
	9 mos.	259	902,674	148,198	1,095,791	174,040	278,434	51,441	383,254	62,775	949,944	86.70	145,847	89,611	101,824	—99,342
Missouri & North Arkansas	Sept.	344	80,254	16,289	102,498	8,705	8,568	1,519	49,935	2,261	70,988	69.20	31,510	29,679	16,237	.....
	9 mos.	304	270,625	68,583	362,978	33,406	44,799	8,187	202,904	16,206	305,502	84.10	57,476	52,289	—65	.....

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1922—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1921.
Missouri, Kansas & Texas	Sept.	1,670	2,095,649	452,153	2,780,639	355,069	666,450	47,033	912,950	75,804	2,065,418	74.30	715,221	572,483	632,264	720,080
	9 mos.	1,670	16,428,662	4,198,629	22,720,719	2,474,325	4,519,746	417,553	6,833,353	801,909	15,109,330	66.50	7,611,389	6,111,659	6,593,342	4,490,887
Mo., Kans. & Tex. of Texas	Sept.	1,737	1,370,475	419,167	1,915,971	321,128	464,071	36,885	752,717	61,704	1,636,662	85.40	279,309	224,896	—9,494	145,012
	9 mos.	1,737	10,046,401	3,744,267	15,138,428	2,478,936	2,427,142	362,726	6,077,952	670,608	11,998,356	79.30	3,140,072	2,667,674	1,041,057	1,677,038
Wichita Falls & Northwestern	Sept.	329	102,845	21,201	134,313	30,690	10,742	864	47,770	7,826	97,597	72.70	36,716	25,873	—1,624	64,923
	9 mos.	329	820,115	201,077	1,107,565	250,343	152,568	8,288	471,243	76,288	955,742	86.30	151,823	46,003	—119,119	432,578
Missouri Pacific	Sept.	7,149	5,859,851	1,319,136	8,049,230	1,510,096	1,677,158	138,890	3,699,156	241,970	7,294,410	90.60	754,820	400,567	79,734	1,821,022
	9 mos.	7,299	54,203,369	12,370,097	73,122,930	12,900,121	14,766,449	1,384,996	30,047,867	2,332,036	61,642,204	84.30	11,480,726	8,154,474	5,344,679	7,060,844
Mobile & Ohio	Sept.	1,165	1,328,933	150,827	1,564,115	193,462	387,434	31,960	572,888	44,612	1,231,038	78.70	333,077	278,980	199,006	203,076
	9 mos.	1,165	10,874,447	1,274,764	12,817,557	1,568,867	2,654,590	387,686	4,958,639	425,675	10,004,115	78.00	2,813,442	2,304,656	1,806,300	517,908
Monongahela	Sept.	106	349,807	41,592	399,645	52,250	83,921	1,185	119,033	8,912	265,301	66.40	134,344	126,344	64,504	148,008
	9 mos.	106	2,201,544	274,547	2,518,106	360,126	428,553	13,071	720,824	83,951	1,606,525	63.80	911,581	839,417	499,203	228,697
Monongahela Connecting	Sept.	7	.....	.....	126,144	30,051	26,671	506	72,265	4,781	134,274	111.80	—14,130	—16,165	—20,645	—16,664
	9 mos.	7	.....	.....	1,181,981	160,521	215,223	4,731	550,388	64,103	994,966	84.20	187,015	167,683	138,262	—92,800
Montour	Sept.	56	208,738	520	209,181	27,458	27,806	1,254	30,14.	5,862	92,525	44.20	116,656	114,798	115,750	782
	9 mos.	56	581,811	6,479	596,269	159,894	224,045	9,059	164,299	54,862	612,159	102.70	—15,890	—35,271	38,180	161,198
Nashville, Chatt. & St. Louis	Sept.	1,258	1,482,209	406,639	2,038,629	272,188	546,155	67,004	864,667	56,596	1,810,759	88.80	227,870	191,919	186,784	402,840
	9 mos	1,258	11,521,148	3,441,464	16,126,717	2,514,206	4,135,062	615,590	6,399,387	517,343	14,222,791	88.20	1,903,926	1,573,161	1,893,277	844,525
Nevada Northern	Sept.	165	65,312	5,421	74,343	12,650	4,882	453	11,817	2,595	32,397	43.60	41,946	35,496	34,039	—4,262
	9 mos.	165	312,792	38,742	387,235	87,997	35,165	3,892	75,363	26,079	228,496	59.00	158,739	102,133	117,941	—94,058
Newburgh & South Shore	Sept.	7	.....	.....	131,441	17,681	38,159	.....	57,692	3,560	117,092	89.10	14,349	2,674	10,232	17,255
	9 mos.	7	.....	.....	1,416,014	101,507	324,595	.....	557,351	32,491	1,015,944	71.70	400,070	287,101	262,392	38,916
New Orleans Great Northern	Sept.	274	145,542	33,565	189,024	28,924	20,444	4,970	65,965	9,926	130,328	68.95	58,696	43,633	45,936	—16,970
	9 mos.	274	1,477,247	326,338	1,883,963	284,503	271,821	46,520	600,372	90,282	1,295,940	68.79	588,023	451,917	409,956	65,021
New York Central	Sept.	6,098	18,733,096	8,555,428	31,111,393	3,221,924	9,310,269	310,181	12,553,901	753,656	26,519,621	85.20	4,591,772	3,001,809	3,111,204	5,428,413
	9 mos.	6,098	148,312,248	67,888,474	246,552,435	28,370,672	64,320,206	2,849,257	92,404,425	6,813,662	197,792,117	80.20	48,760,318	34,108,184	35,657,023	32,817,380
Cincinnati Northern	Sept.	244	213,558	12,864	235,554	52,236	42,031	5,974	81,690	6,292	194,222	82.50	41,332	29,662	10,633	115,897
	9 mos.	244	2,235,063	138,354	2,442,257	515,715	466,641	45,857	847,196	73,244	1,944,178	79.60	498,079	360,006	171,083	595,682
Cleve., Cin., Chic. & St. Louis	Sept.	2,406	5,193,381	1,440,172	7,200,006	873,239	2,340,696	101,442	2,880,881	168,834	6,424,849	89.20	775,157	482,134	198,997	1,278,356
	9 mos.	2,410	44,480,356	12,125,003	61,379,687	7,116,498	12,728,194	1,005,836	23,416,048	1,542,728	46,266,419	75.40	15,113,268	11,605,588	10,235,491	5,674,399
Indiana Harbor Belt	Sept.	119	.....	.....	998,465	139,804	142,912	4,256	417,573	21,083	725,628	72.70	272,837	240,858	111,356	131,183
	9 mos.	119	.....	.....	7,303,536	905,954	798,524	37,323	2,852,671	173,558	4,768,030	65.30	2,535,506	2,192,426	1,-446,591	161,670
Kanawha & Michigan	Sept.	176	386,395	46,897	448,560	—1,869	186,190	1,450	176,594	4,339	366,704	81.80	81,856	55,979	63,012	60,107
	9 mos.	176	2,057,089	396,801	2,577,481	500,692	1,048,912	37,088	1,076,637	92,015	2,754,907	106.90	—177,426	—418,721	—334,837	284,852
Lake Erie & Western	Sept.	Included in New York, Chicago & St. Louis.														
	9 mos.															
Michigan Central	Sept.	1,862	5,003,315	1,815,670	7,578,188	821,296	1,797,561	84,054	250,183	133,970	5,417,208	71.50	2,160,980	1,700,132	1,627,211	2,035,993
	9 mos.	1,862	39,339,770	14,239,929	59,354,546	6,245,824	12,801,769	814,728	20,739,363	1,272,579	42,501,173	71.60	16,853,373	13,313,918	12,483,297	9,814,582
Pittsburgh & Lake Erie	Sept.	227	2,666,832	259,456	3,026,790	311,482	716,001	18,181	1,080,006	59,455	2,187,852	72.30	838,938	676,533	842,513	—82,697
	9 mos.	227	16,217,147	2,032,843	18,919,524	2,414,790	7,895,073	182,289	6,780,749	554,592	17,847,193	94.30	1,072,331	329,109	1,368,264	1,289,730
Toledo & Ohio Central	Sept.	503	1,224,167	70,359	1,365,296	146,712	390,336	11,109	541,035	30,642	1,122,176	82.20	243,120	192,598	202,769	155,799
	9 mos.	503	5,213,614	569,151	6,097,593	1,139,257	2,036,458	100,834	2,825,979	237,385	6,365,381	104.40	—267,788	—747,656	—634,425	928,293
New York, Chicago & St. Louis	Sept.	1,242	2,987,110	170,656	3,283,203	456,473	717,897	77,283	1,327,321	117,136	2,704,517	82.40	578,686	361,401	339,370	488,180
	9 mos.	1,242	26,419,149	1,323,558	28,640,024	3,579,915	5,532,592	693,062	10,817,859	1,014,594	21,691,911	75.70	6,948,113	5,349,018	5,125,893	3,129,523
N. Y., New Haven & Hartford	Sept.	1,985	5,164,675	4,674,746	11,086,238	1,449,876	2,509,309	58,815	4,509,832	256,352	8,958,191	80.80	2,128,047	1,766,678	1,245,279	668,491
	9 mos.	1,986	43,345,111	36,581,836	89,944,465	12,583,755	18,737,888	495,150	36,783,875	2,549,255	72,533,404	80.60	17,411,061	13,957,183	9,860,468	—3,019,179
Central New England	Sept.	295	458,514	18,988	503,726	160,540	110,011	4,354	201,485	10,860	487,250	96.70	16,476	—5,605	—12,058	156,285
	9 mos.	295	4,452,842	172,948	4,869,980	1,077,209	770,313	38,140	1,776,714	101,458	3,762,910	77.30	1,107,070	904,503	551,380	872,925
New York, Ontario & Western	Sept.	569	729,276	291,892	1,182,769	176,271	234,012	17,680	552,767	29,549	1,010,662	85.40	172,107	147,021	117,906	162,546
	9 mos.	569	4,973,448	2,684,881	9,193,954	1,297,588	1,613,665	138,873	4,331,366	267,854	7,665,739	83.40	1,528,215	1,210,945	839,335	1,161,868
Norfolk & Western	Sept.	2,237	6,665,744	881,898	7,857,559	1,163,809	2,399,165	77,710	2,662,388	146,034	6,465,496	82.30	1,392,063	791,606	875,727	1,443,300
	9 mos.	2,237	60,225,342	6,692,861	69,335,378	9,031,521	15,916,555	705,778	21,001,504	1,324,698	48,082,591	69.30	21,252,787	16,595,055	18,191,494	8,796,765
Norfolk Southern	Sept.	930	501,352	125,915	664,373	102,384	110,654	21,215	262,640	24,861	522,530	78.60	141,843	109,523	84,552	89,220
	9 mos.	930	4,698,689	1,097,329	6,122,293	913,643	976,255	196,879	2,560,411	268,104	4,911,399	80.20	1,210,894	933,042	720,330	391,464
Northern Pacific	Sept.	6,630	7,616,269	1,408,475	9,846,468	1,097,429	2,494,007	117,432	3,359,759	193,775	7,354,367	74.70	2,492,101	1,767,011	2,109,089	2,455,292
	9 mos.	6,643	50,190,932	11,795,544	68,294,756	9,697,911	16,185,711	1,253,221	26,093,263	1,915,663	55,982,673	82.00	12,312,083	5,775,925	8,386,743	3,527,995
Northwestern Pacific	Sept.	496	487,737	236,893	800,169	79,748	132,250	8,644	279,537	15,358	517,200	64.60	282,969	233,810	211,465	249,418
	9 mos.	501	3,252,958	2,065,184	6,026,369	910,180	776,707	63,943	2,308,789	131,866	4,205,224	69 80	1,821,145	1,393,154	1,253,878	1,380,887
Pennsylvania	Sept.	10,381	41,348,961	14,188,331	60,712,345	7,922,936	15,060,302	537,338	25,220,294	1,267,795	50,937,018	83.90	9,775,327	6,667,838	6,298,532	3,841,895
	9 mos.	10,381	311,154,422	107,774,003	459,752,494	57,276,507	116,536,307	5,113,613	177,755,149	11,878,098	375,621,280	81.70	84,131,214	62,535,594	56,712,505	23,900,990
Balti., Chesa. & Atlantic	Sept.	87	92,615	50,840	151,126	15,234	26,320	1,452	95,677	4,135	142,818	94.50	8,308	825	—544	27,278
	9 mos.	87	807,344	366,522	1,223,742	125,935	313,413	•17,326	700,480	33,856	1,191,015	97.30	32,727	—12,933	—14,138	74,022
Cumberland Valley & Mart.	Sept.	33	74,892	6,002	83,916	14,718	17,308	852	34,632	2,096	69,606	82.90	14,310	8,502	4,187	9,035
	9 mos.	33	590,554	52,958	673,596	92,476	149,667	8,016	285,026	22,447	557,632	82.80	115,964	75,757	35,960	317,682
Cin., Lebanon & Northern	Sept.	Included in Penn. R. R.														
	9 mos.															
Grand Rapids & Indiana	Sept.	Included in Penn. R. R.														
	9 mos.															

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1922—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1921.
Long Island	Sept.	398	734,256	1,986,980	2,980,012	330,192	460,921	15,263	1,254,354	55,157	2,140,885	71.80	839,127	631,478	563,706	828,378
	9 mos.	398	6,388,479	15,121,537	23,587,475	2,457,712	3,702,946	154,341	10,065,454	510,522	17,079,810	72.40	6,507,665	5,123,334	4,523,253	2,809,181
Maryland, Dela. & Va.	Sept.	82	69,869	51,525	125,510	8,385	13,384	743	84,338	2,728	109,578	87.30	15,932	13,934	12,412	5,404
	9 mos.	82	569,613	295,063	894,717	85,873	220,763	16,626	585,208	22,314	930,784	104.00	—36,067	—56,474	—67,547	—40,945
New York, Phila. & Norfolk	Sept.	122	802,826	104,636	953,337	54,140	183,367	7,089	316,609	16,252	586,848	61.60	366,489	344,727	306,863	—56,483
	9 mos.	122	4,915,351	751,434	6,120,180	512,443	1,505,754	67,909	2,800,427	131,656	5,098,079	83.30	1,022,101	831,643	602,392	—748,265
Pitts. Cin., Chic. & St. Louis	Sept.	Included in Penn R. R.														
	9 mos.															
West Jersey & Seashore	Sept.	359	496,372	975,226	1,574,061	186,754	231,819	22,561	702,183	35,009	1,196,356	76.00	377,705	263,975	232,753	170,108
	9 mos.	359	3,675,927	6,393,592	10,899,240	1,481,187	1,887,695	152,194	4,840,094	254,408	8,730,904	80.20	2,159,336	1,340,080	1,147,507	623,348
Peoria & Pekin Union	Sept.	19	21,291	4,417	157,825	27,112	11,774	331	61,038	8,868	109,123	69.10	48,702	33,702	65,417	37,055
	9 mos.	19	121,430	35,105	1,308,999	225,927	128,291	2,150	556,991	80,872	994,231	76.00	314,768	183,268	412,241	147,140
Pere Marquette	Sept.	2,212	2,636,146	433,120	3,370,584	399,184	501,119	47,476	1,234,101	98,326	2,285,016	67.80	1,085,568	945,155	789,460	916,495
	9 mos.	2,218	21,587,701	3,825,052	27,984,584	3,351,088	5,520,884	465,915	10,614,060	935,262	20,949,528	74.90	7,035,056	5,724,512	4,610,628	4,423,661
Philadelphia & Reading	Sept.	1,126	5,479,317	893,478	6,782,686	686,640	1,339,142	65,789	2,959,324	143,881	5,209,024	76.80	1,573,662	1,424,712	1,343,941	1,648,122
	9 mos.	1,127	15,178,753	7,337,327	55,691,782	6,658,973	15,125,155	561,498	21,530,837	1,313,954	45,237,565	81.26	10,454,217	8,690,294	6,741,276	6,700,448
Atlantic City	Sept.	176	123,713	338,230	483,819	78,022	40,194	4,925	272,904	4,672	400,770	82.80	83,049	63,783	12,355	87,769
	9 mos.	176	1,107,798	2,584,250	3,799,303	547,643	336,642	58,686	2,062,425	42,861	3,046,906	80.20	752,397	473,052	216,755	297,332
Perkiomen	Sept.	41	105,365	10,143	119,851	8,887	3,980	112	39,621	878	53,515	44.70	66,336	62,380	56,728	23,160
	9 mos.	41	847,660	77,257	957,317	67,206	37,691	973	394,986	8,317	509,506	53.20	447,811	401,665	347,233	347,334
Port Reading	Sept.	21	123,460	.....	149,527	9,806	2,562	229	52,837	1,310	66,744	44.60	82,783	69,850	38,841	13,697
	9 mos.	21	916,365	.....	1,293,205	166,775	106,414	2,061	469,322	15,967	76,537	58.80	532,668	400,972	—13,289	101,159
Pittsburg & Shawmut	Sept.	102	80,050	4,067	88,761	23,969	26,392	2,224	41,231	5,708	99,524	112.10	—10,763	—10,894	16,603	53,617
	9 mos.	102	701,581	44,748	765,642	230,214	302,073	15,076	267,614	60,483	875,460	114.30	—109,818	—118,624	4,166	130,024
Pittsburg & West Virginia	Sept.	85	215,521	9,017	251,616	39,171	56,499	3,006	72,383	11,869	193,558	76.90	58,058	23,174	95,380	—47,461
	9 mos.	85	1,701,143	79,095	2,047,543	290,198	536,930	31,609	514,912	134,100	1,590,947	77.70	456,596	212,650	567,288	—224,455
Pittsburg, Shawmut & Northern	Sept.	210	143,705	5,632	153,646	22,393	33,300	1,688	61,914	7,374	126,676	82.40	26,970	24,588	34,309	—28,009
	9 mos.	210	739,602	57,691	830,764	183,160	385,237	14,633	369,476	60,372	1,012,925	121.90	—182,161	—203,454	—202,379	—175,404
Quincy, Omaha & Kansas City	Sept.	252	93,444	23,457	128,715	30,612	20,012	938	68,551	1,964	121,913	94.70	6,802	2,877	—3,168	7,070
	9 mos.	252	527,306	212,231	822,241	268,864	134,598	7,299	409,628	20,353	838,776	102.00	—16,535	—51,915	—97,851	—184,316
Richmond, Fred. & Potomac	Sept.	117	502,245	303,726	946,638	125,805	146,191	8,323	324,571	27,626	645,830	68.20	300,808	248,093	215,339	142,735
	9 mos.	117	4,162,808	2,632,245	8,084,749	978,188	1,097,997	72,941	2,794,110	242,900	5,354,476	66.20	2,730,273	2,277,310	1,873,309	901,635
Rutland	Sept.	415	264,740	165,076	538,064	108,490	92,042	8,704	218,669	12,114	441,759	82.10	96,305	74,348	81,327	100,012
	9 mos.	415	2,261,448	1,144,983	4,280,835	841,863	794,552	74,635	1,935,172	118,674	3,778,753	88.30	502,082	311,983	351,785	269,506
St. Louis-San Francisco	Sept.	4,760	4,309,250	1,521,853	6,414,570	1,012,272	1,260,696	78,350	2,635,694	181,494	5,144,648	80.20	1,269,922	938,691	724,243	1,824,567
	9 mos.	4,760	40,955,676	13,558,117	58,891,289	8,714,457	11,178,436	750,497	21,804,822	1,689,804	43,916,929	74.60	14,974,360	11,961,611	11,425,141	13,420,134
Ft. Worth & Rio Grande	Sept.	235	105,134	28,557	146,292	30,309	33,148	2,675	58,713	4,956	129,744	88.70	16,548	12,880	—1,921	5,801
	9 mos.	235	622,495	258,730	974,513	369,776	208,656	24,321	455,701	50,588	1,106,752	113.60	—132,239	—165,956	—229,882	—197,850
St. Louis, San Fran. & Tex.	Sept.	134	124,262	15,037	145,094	20,160	23,288	3,820	55,034	6,481	108,757	75.00	36,337	34,299	10,705	57,784
	9 mos.	134	1,059,065	135,046	1,248,854	265,302	209,019	33,434	514,685	61,462	1,083,019	86.70	165,835	147,989	—49,271	—266,898
St. Louis Southwestern	Sept.	968	1,539,811	103,973	1,690,367	228,672	216,837	37,560	489,465	49,163	1,023,788	60.60	666,579	563,621	483,391	493,385
	9 mos.	968	11,223,021	1,131,857	12,871,797	1,784,718	1,794,244	376,468	3,559,324	475,538	8,035,965	62.40	4,835,832	4,188,872	3,850,981	3,519,329
St. Louis Southwestern of Texas	Sept.	807	593,291	80,033	711,383	128,609	147,971	19,270	323,888	29,291	648,115	91.10	63,268	39,212	39,817	—18,406
	9 mos.	807	4,243,292	775,011	5,359,194	1,546,156	1,312,496	178,120	2,791,912	276,538	6,095,562	113.70	—736,368	—953,343	—891,021	—902,535
San Antonio & Aransas Pass	Sept.	739	541,119	99,016	681,127	74,161	119,804	9,524	200,378	20,902	423,904	62.20	257,223	243,476	234,542	132,195
	9 mos.	739	3,223,666	649,642	4,146,667	804,585	963,905	84,699	1,786,850	232,159	3,856,484	93.20	280,183	153,861	54,258	17,341
San Antonio, Uvalde & Gulf	Sept.	317	58,925	19,381	86,620	15,510	15,094	3,075	32,664	6,606	72,922	84.20	13,698	10,827	—1,121	2,827
	9 mos.	317	562,660	157,541	800,648	133,839	102,462	25,755	305,306	59,190	625,253	78.10	175,395	148,626	45,382	94,993
Seaboard Air Line	Sept.	3,563	2,603,259	644,580	3,700,004	409,641	795,891	109,126	1,454,652	159,424	2,950,757	79.80	749,247	574,002	320,499	408,573
	9 mos.	3,563	22,804,635	6,481,483	32,734,520	3,690,130	5,726,127	1,091,547	13,897,957	1,411,340	26,087,482	79.70	6,647,038	5,087,621	2,724,181	890,061
Southern	Sept.	6,971	6,665,003	2,600,289	10,137,296	1,407,846	1,474,433	184,022	3,984,992	287,938	7,422,894	73.20	2,714,402	2,213,327	1,569,095	2,206,959
	9 mos.	6,971	62,300,056	22,144,092	91,535,805	13,039,505	15,832,130	1,851,976	36,674,902	2,831,531	70,943,734	77.50	20,592,071	16,294,978	12,801,964	7,196,191
Alabama Great Southern	Sept.	318	325,427	145,434	517,598	87,129	65,895	16,929	224,219	20,785	420,772	81.30	96,826	63,346	50,052	84,264
	9 mos.	318	4,399,822	1,337,459	6,088,431	771,740	1,279,172	162,586	2,439,224	218,318	4,921,571	80.80	1,166,860	786,623	751,428	497,890
Cin., N. O. & Texas Pacific	Sept.	338	759,275	249,537	1,090,769	159,622	226,724	27,861	456,586	37,840	917,343	84.10	173,426	109,462	38,904	201,254
	9 mos.	338	8,840,614	2,383,959	11,828,017	1,464,026	3,128,371	255,327	4,434,736	373,853	9,739,562	82.30	2,088,465	1,446,035	1,004,454	1,406,408
Georgia, Southern & Florida	Sept.	402	189,877	97,896	317,032	64,058	52,098	7,638	144,203	14,249	284,550	89.80	32,482	11,839	2,145	29,171
	9 mos.	402	2,218,757	885,560	3,358,943	560,580	570,657	78,298	1,479,927	110,591	2,825,093	84.10	523,850	371,294	216,386	—570,567
New Orleans & Northeastern	Sept.	207	175,635	71,491	303,136	68,564	94,786	9,769	181,687	14,119	372,767	123.00	—69,631	—106,149	—99,780	—3,598
	9 mos.	207	2,747,153	687,672	3,878,183	617,184	919,653	95,207	1,864,563	151,767	3,680,540	94.90	197,643	—145,458	—209,910	—243,973
Northern Alabama	Sept.	110	111,888	12,676	128,231	16,453	6,657	1,045	56,432	2,784	83,371	65.00	44,860	40,890	9,237	—1,688
	9 mos.	110	862,600	103,497	989,973	159,682	51,060	11,417	395,211	26,620	643,985	65.10	345,988	309,663	85,486	—69,066
Southern Pacific	Sept.	7,118	11,399,574	3,865,659	16,808,629	1,977,068	2,941,828	237,853	5,373,696	454,722	11,251,733	66.90	5,556,896	5,051,890	4,793,807	4,371,292
	9 mos.	7,118	86,655,891	33,401,766	132,684,350	17,614,203	22,981,468	2,112,970	45,429,665	3,895,152	94,488,606	71.20	38,195,744	26,894,292	25,766,910	25,460,082
Arizona Eastern	Sept.	382	203,489	28,168	244,498	39,184	34,328	2,592	74,064	18,092	169,257	69.20	75,241	47,974	33,607	23,250
	9 mos.	382	1,963,447	253,298	2,306,467	301,481	268,576	28,255	670,622	166,835	1,442,756	62.60	863,711	645,220	515,632	11,597

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1922—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues			Operating expenses						Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1921.
			Freight.	Passenger.	Total (inc. misc.)	Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.				
Atlantic S. S. Lines	Sept.	...	952,400	59,848	1,062,196	16,377	282,300	19,907	602,952	29,744	951,280	89.60	110,916	99,263	98,813	—18,081
	9 mos.	...	7,067,367	469,553	8,559,057	115,489	1,717,313	172,549	4,933,561	244,641	7,183,553	83.90	1,375,504	1,264,115	1,266,940	115,867
Galv., Harris. & San Ant.	Sept.	1,379	1,512,453	368,687	1,985,158	379,033	394,193	37,655	812,501	74,131	1,702,745	85.80	282,413	224,759	161,901	341,898
	9 mos.	1,379	11,719,141	3,356,914	15,968,577	3,014,254	3,119,046	333,559	6,377,177	650,698	13,575,890	85.00	2,392,687	1,922,812	1,538,408	1,626,955
Houston & Tex. Central	Sept.	932	1,037,759	305,257	1,425,588	211,543	208,954	24,015	413,410	45,645	899,773	63.10	525,815	479,742	431,811	242,136
	9 mos.	932	7,349,884	2,612,120	10,639,066	1,924,665	2,033,544	213,747	3,755,292	382,286	8,290,210	77.90	2,348,856	1,948,461	1,640,761	485,892
Houston East & West Tex.	Sept.	191	224,478	44,974	282,318	51,583	52,482	3,639	107,582	8,301	215,478	76.30	66,840	59,707	37,748	45,545
	9 mos.	191	1,806,008	374,566	2,286,013	460,810	459,565	31,275	911,195	73,235	1,919,335	84.00	366,678	309,605	170,201	154,662
Louisiana Western	Sept.	207	246,542	85,373	355,070	64,479	55,965	8,945	93,445	17,262	244,324	68.80	110,746	84,807	89,977	62,899
	9 mos.	207	2,075,211	779,074	3,064,744	588,182	571,702	79,820	906,970	158,664	2,341,362	76.40	723,382	498,511	513,678	499,853
Morgan's La. & T. R. R. & S. S.	Sept.	400	544,934	151,453	748,665	131,954	169,778	15,263	248,390	32,911	603,445	80.60	145,220	98,748	85,062	92,673
	9 mos.	400	3,942,568	1,360,817	5,761,891	1,233,700	1,338,251	144,133	2,333,842	299,069	5,391,854	93.60	370,037	—49,846	—176,333	—451,339
Texas & New Orleans	Sept.	507	554,077	150,307	746,756	168,179	176,943	10,676	239,074	26,421	627,047	84.00	119,709	90,995	40,370	45,134
	9 mos.	507	4,642,254	1,374,460	6,398,765	1,296,251	1,681,650	96,553	2,462,545	231,122	5,815,172	90.90	583,593	372,055	78,679	—439,740
Spokane International	Sept.	165	100,427	17,309	122,804	15,744	9,732	4,881	33,007	5,909	69,973	67.00	52,831	47,354	39,931	20,587
	9 mos.	165	705,043	116,215	864,253	132,136	75,457	27,942	306,208	53,341	601,482	69.60	262,771	213,360	151,824	147,787
Spokane, Portland & Seattle	Sept.	551	430,516	159,081	659,625	74,139	109,493	9,411	203,169	19,187	424,899	64.40	234,726	174,726	169,716	279,622
	9 mos.	551	3,525,976	1,299,355	5,323,461	513,440	793,475	92,033	1,783,244	179,483	3,439,148	64.60	1,884,313	1,150,527	1,048,894	966,575
Tennessee Central	Sept.	292	198,687	41,809	254,317	39,099	37,332	5,525	109,095	9,422	200,417	78.80	53,900	48,801	6,643	.....
	9 mos.	292	1,189,186	325,296	1,613,559	257,639	227,915	44,915	697,330	66,060	1,293,762	80.20	319,797	284,572	86,152	.....
Term. R. R. Assn. of St. Louis	Sept.	37	.....	.....	345,926	98,465	82,281	945	161,035	3,220	349,329	101.00	—3,403	—63,446	23,079	125,673
	9 mos.	37	.....	.....	3,324,892	724,550	376,239	9,518	1,132,650	51,216	2,325,257	69.90	999,635	497,101	1,525,786	1,321,779
East St. Louis Connecting	Sept.	1	.....	.....	153,704	13,793	7,840	268	55,901	2,214	80,016	52.10	73,688	65,617	57,738	38,216
	9 mos.	1	.....	.....	1,505,446	119,551	66,991	2,756	509,247	23,369	721,914	48.00	783,532	686,751	609,387	226,459
St. L. Merchants' Bridge Term.	Sept.	9	.....	.....	418,650	43,240	31,842	835	132,887	5,799	214,603	51.30	204,047	178,383	166,975	87,144
	9 mos.	9	.....	.....	2,785,261	369,870	250,003	8,454	1,249,646	41,681	1,919,654	68.90	865,607	688,406	828,302	448,965
St. Louis Transfer	Sept.	6	.....	.....	57,590	10,954	4,953	155	33,188	1,421	50,671	88.00	6,919	6,030	—957	36,301
	9 mos.	6	.....	.....	546,396	92,170	40,600	1,593	297,240	14,709	446,312	81.70	100,084	94,849	22,700	321,753
Texas & Pacific	Sept.	1,952	1,904,192	607,977	2,719,009	407,330	672,024	51,158	1,012,864	88,718	2,257,722	33.00	461,287	361,184	275,431	206,910
	9 mos.	1,952	15,071,876	5,267,070	22,021,594	3,883,809	4,402,485	434,780	8,390,414	831,616	18,116,389	82.30	3,905,205	2,927,530	2,314,911	2,395,305
Toledo, Peoria & Western	Sept.	247	90,639	33,651	141,067	32,445	21,854	2,431	73,556	7,534	137,820	97.70	3,247	—7,776	—3,051	2,693
	9 mos.	247	720,760	381,983	1,210,502	229,030	279,021	25,141	632,454	69,728	1,235,286	102.00	—24,784	—124,264	—147,429	—342,576
Toledo, St. Louis & Western	Sept.	454	1,028,526	30,431	1,102,485	122,165	127,397	22,280	348,806	218,197	838,832	76.10	263,653	160,849	96,717	154,776
	9 mos.	454	7,317,867	267,293	7,942,474	980,920	1,211,595	193,490	2,518,823	412,049	5,316,765	66.90	2,625,709	2,143,834	1,852,245	872,359
Trinity & Brazos Valley	Sept.	368	195,168	23,295	224,239	33,653	22,779	2,933	73,294	14,175	145,632	62.20	78,607	71,535	53,243	47,856
	9 mos.	368	1,847,136	189,198	2,114,817	497,382	402,276	28,807	765,741	118,862	1,807,747	85.50	307,070	243,850	—104,320	52,178
Ulster & Delaware	Sept.	128	68,670	50,133	155,086	34,664	34,757	2,145	83,962	8,440	164,281	105.93	—9,195	—15,198	—17,369	13,782
	9 mos.	128	539,426	436,695	1,287,370	207,803	199,095	29,725	646,354	72,958	1,160,164	90.12	127,206	73,149	38,872	69,483
Union	Sept.	45	.....	.....	1,016,401	72,916	160,138	162	456,548	6,823	696,587	68.50	319,814	325,814	450,663	284,267
	9 mos.	45	.....	.....	8,320,821	658,943	1,593,946	2,061	3,426,011	63,307	5,744,268	69.00	2,576,553	2,469,808	3,078,688	1,667,634
Union Pacific	Sept.	3,707	8,803,321	1,605,522	11,280,849	1,570,062	2,407,737	109,429	3,198,009	271,303	7,763,253	68.80	3,517,596	2,922,699	2,845,281	4,086,963
	9 mos.	3,688	55,067,363	13,053,795	75,012,189	9,330,656	15,611,416	1,226,011	21,991,610	2,744,424	52,461,768	69.90	22,550,421	17,335,506	17,040,175	20,180,973
Oregon Short Line	Sept.	2,364	2,906,073	481,023	3,614,100	491,941	621,009	39,227	1,484,408	113,123	2,805,701	77.60	808,399	549,199	517,910	1,203,271
	9 mos.	2,360	19,609,915	4,164,750	25,690,735	4,113,507	4,883,396	401,902	8,699,567	1,042,097	19,676,955	76.60	6,013,780	3,541,578	3,352,808	2,984,314
Oregon-Wash. R. R. & Nav.	Sept.	2,237	1,990,764	553,209	2,767,385	636,180	520,535	55,724	1,206,000	116,346	2,571,184	92.90	196,201	14,931	—76,309	223,733
	9 mos.	2,229	14,345,771	4,311,692	20,499,723	4,571,756	3,875,932	540,234	9,118,355	1,120,800	19,493,851	95.10	1,005,872	—625,038	—1,344,234	—540,082
St. Joseph & Grand Island	Sept.	258	229,855	25,195	274,371	46,990	72,686	2,376	114,667	11,252	247,971	90.40	26,400	9,895	1,063	44,167
	9 mos.	258	1,909,747	228,198	2,288,938	424,890	439,954	22,873	1,014,350	108,079	2,010,146	87.80	278,792	121,462	42,376	—24,071
Utah	Sept.	102	125,055	859	126,948	34,985	31,475	392	41,158	5,224	113,035	89.00	13,913	7,770	—19,277	24,109
	9 mos.	102	1,224,726	6,714	1,243,947	211,161	328,594	3,368	303,681	43,811	890,114	71.50	353,833	296,548	177,755	—38,929
Virginian	Sept.	540	1,132,005	79,173	1,297,386	170,977	403,201	12,741	437,886	30,042	1,047,876	80.80	249,510	99,550	133,570	191,348
	9 mos.	527	12,996,721	608,907	14,542,992	1,638,581	3,454,872	104,536	3,462,560	279,941	8,924,249	61.40	5,618,743	4,536,382	4,665,729	3,960,501
Wabash	Sept.	2,472	3,538,643	789,067	4,763,877	722,909	1,142,959	116,966	1,972,889	137,392	4,104,602	86.20	659,275	467,329	219,377	751,951
	9 mos.	2,472	32,630,828	6,843,369	42,740,987	6,258,200	8,461,265	1,034,981	18,123,744	1,341,714	35,406,682	82.80	7,334,305	5,616,985	3,244,356	2,589,019
Western Maryland	Sept.	804	1,632,484	91,793	1,819,778	287,602	423,272	34,161	664,772	44,340	1,476,600	81.10	343,178	283,178	267,211	242,922
	9 mos.	804	11,262,704	742,217	12,908,023	1,761,262	2,723,252	310,434	4,620,128	412,603	10,026,435	77.70	2,881,588	2,451,588	2,272,686	2,201,556
Western Pacific	Sept.	1,045	1,112,715	208,582	1,411,951	190,049	209,471	33,316	436,502	35,095	931,688	66.00	480,263	403,950	399,018	251,975
	9 mos.	1,044	6,374,926	1,741,485	8,729,245	1,488,704	1,581,343	294,774	3,278,187	336,501	7,169,882	82.10	1,559,363	811,826	967,752	951,171
Wheeling & Lake Erie	Sept.	511	767,132	51,655	935,247	214,847	313,086	16,864	431,718	33,949	1,011,044	108.10	—75,797	—164,190	—212,574	220,028
	9 mos.	511	8,496,595	619,699	9,930,429	1,669,916	2,236,186	160,295	3,710,955	307,836	8,114,242	81.70	1,816,187	843,990	590,042	1,317,274

Railroad Meeting of A. S. M. E.

Three papers on locomotive design and operation will be presented at the railroad session of the annual meeting of the American Society of Mechanical Engineers to be held at 29 West Thirty-ninth street, New York, Wednesday afternoon, December 6. The titles of the papers and the authors are as follows: Steam Distribution in the Locomotive, G. H. Hartman, Locomotive Appliance Company; Stresses in Locomotive Frames, R. Eksergian, Baldwin Locomotive Works; Mechanical Drafting of Locomotives, F. H. C. Coppus, Coppus Engineering Company.

On Wednesday evening the society will hold a joint session with the American Economic Association at which L. F. Loree, president of the Delaware & Hudson, will deliver an address. E. M. Herr of the Westinghouse Electric & Manufacturing Company will speak on the subject of the Human Element in Industry.

Wage Statistics for August

The Interstate Commerce Commission's summary of wage statistics for the month of August, 1922, shows an increase in the total number of employees of 126,250, as compared with the number reported for the preceding month. The number of employees in the maintenance of equipment group, counted as of the middle of the month, showed an increase of 78,936 over the corresponding number for July, the first month of the shopmen's strike, making a total as of August 15 of 299,385 maintenance of equipment employees.

Considerable increase is shown in the average earnings per employee due to a greater proportion of overtime, and the fact that August had 27 working days while July had only 25.

Compared with the previous month, the increase in the number of employees, by groups, was as follows:

Executives, officials, and staff assistants	122
Professional, clerical, and general	9,616
Maintenance of way and structures	28,625
Maintenance of equipment and stores	78,936
Transportation (other than train, engine, and yard)	5,696
Transportation (yardmasters, switch tenders, and hostlers)	97
Transportation (train and engine service)	3,158
Net increase	126,250

A comparison of the number of employees and their compensation, by months, follows:

Month	Number of employees	Total compensation
August, 1921[1]	1,679,927	$227,745,895
September, 1921[1]	1,718,330	223,972,822
October, 1921[1]	1,754,136	237,602,959
November, 1921[1]	1,732,353	225,304,006
December, 1921[1]	1,637,151	214,921,396
January, 1922[1]	1,552,014	205,178,639
February, 1922[1]	1,545,040	194,523,427
March, 1922[1]	1,579,158	216,704,408
April, 1922	1,578,133	203,413,071
May, 1922	1,628,228	216,672,028
June, 1922	1,685,414	222,932,689
July, 1922	1,467,824	193,571,244
August, 1922	1,594,074	224,976,644

[1] Excludes Detroit, Toledo & Ironton Railroad.

English Store Door Delivery Discussed by Terminal Engineers

The subject of English methods of store door delivery was presented by F. C. Horner, transportation engineer, before the Society of Terminal Engineers at the Engineering Societies building, New York City, on November 4. Mr. Horner's paper was attended by a moving picture of the work at one of the large railway freight stations. Following this there was an open discussion covering the salient points of his paper as well as those brought out at the September and October meetings when the subjects of store door delivery and shipping containers were presented. Store door delivery in England is, to all practical purposes, a sidewalk delivery made by the railroads and although this service is optional with the shippers or consignees, about 80 per cent of l. c. l. freight is thus handled. The tariff rates for all of the roads show or will show shortly the charges separated into rail haul and cartage items. A minimum rate is provided and certain exceptions are made such as minerals for instance. No classification is made, however, in regard to cartage. The average rate is approximately $1.50 a ton with an average haul of about 2½ miles in London.

Unless otherwise specified, delivery is always made by the railroad, the aim of the roads being to get the freight out of the station promptly. This arrangement is country wide, the railroads arranging with a local trucker in small towns to handle the l. c. l. shipments when there is not sufficient volume to justify railway owned equipment. Motor trucks are now being used to a limited but growing extent. Car load service will be given when wanted. When a shipper or consignee desires to truck his own freight, he is given every facility and is limited only in one respect. He must deliver or call for freight during certain specified times. The average consignment in England is about 300 lb. as compared to 900 lb. in this country.

A. R. A. Offers Co-operation in Work of Coal Commission

The co-operation of the railroads was tendered to the United States Coal Commission, in a letter sent to John Hays Hammond, the chairman, by R. H. Aishton, president of the American Railway Association, on November 14. Extracts from this letter appear below:

"While the railroads of the country have not been officially addressed by the commission concerning the subjects under investigation," Mr. Aishton said, "it is their desire to be as helpful as possible in aiding the commission to obtain a solution of the problems before them. As you are fully aware, the railroads are the largest users of coal, and are therefore vitally interested in the economic problems concerning this industry, from the standpoint of the consumer, as well as the distributor of the product. The railroads and their various agencies extend their helpful co-operation to the commission with a view of aiding in every possible way in bringing about a successful accomplishment of the tasks before you."

Revenues and Expenses for September

The Interstate Commerce Commission's summary of revenues and expenses for Class I roads for September and nine months of 1922 is as follows:

Item	September 1922	September 1921	Nine Months 1922	Nine Months 1921
Average number of miles operated	235,058.13	234,974.18	235,231.63	234,854.30
Revenues:				
Freight	$355,402,370	$354,841,357	$2,846,610,826	$2,894,218,771
Passenger	[2] 97,504,148	[3] 100,599,536	[4] 802,566,601	[5] 893,687,823
Mail	7,383,568	7,376,941	66,550,312	71,256,168
Express	12,980,046	10,426,998	94,023,878	70,544,920
All other transportation	15,680,420	14,668,027	130,395,621	120,935,012
Incidental	10,668,226	9,960,834	83,821,569	89,220,282
Joint facility—Cr	765,660	637,769	7,410,439	5,761,415
Joint facility—Dr.	181,891	163,698	1,581,712	1,256,137
Railway operating revenues	500,202,547	498,347,764	4,029,797,534	4,144,368,254
Expenses:				
Maintenance of way and structures	67,585,109	72,748,042	547,885,294	580,247,777
Maintenance of equipment	120,040,733	103,778,465	893,894,517	946,134,097
Traffic	6,849,320	6,873,477	64,568,193	63,649,851
Transportation	197,636,508	177,700,887	1,561,063,088	1,734,583,431
Miscellaneous operations	4,303,461	4,024,987	35,631,272	37,573,124
General	12,753,995	13,140,769	117,246,654	127,611,225
Transportation for investment—Cr.	607,778	499,484	4,728,802	4,424,322
Railway operating expenses	408,561,348	377,767,143	3,215,560,216	3,485,375,183
Net revenue from railway operations	91,641,199	120,580,621	814,237,318	658,993,071
Railway tax accruals	26,422,050	25,919,081	227,531,452	209,534,410
Uncollectible railway revenues	118,867	99,920	1,023,701	883,816
Railway operating income	65,100,282	94,561,620	585,682,165	448,574,845
Equipment rents—Dr. balance	5,080,637	4,787,807	42,618,429	39,750,542
Joint facility rents—Dr. balance	1,562,181	2,167,438	13,645,090	14,755,463
Net railway operating income	58,457,464	87,606,375	529,418,646	394,068,840
Ratio of expenses to revenues (per cent)	81.68	75.80	79.79	84.10

[2] Includes $3,217,091, sleeping and parlor car surcharge.
[3] Includes $2,932,258, sleeping and parlor car surcharge.
[4] Includes $24,352,547, sleeping and parlor car surcharge.
[5] Includes $24,704,549, sleeping and parlor car surcharge.

Traffic News

The Chicago & North Western has issued a booklet entitled "Forty Ways, and More, to California and the North Coast."

The Associated Traffic Clubs of America will hold a special meeting on December 5 and 6 at the Hotel Statler, St. Louis, Mo. The Traffic Club of St. Louis will hold its annual meeting and banquet on the evening of December 5 and delegates to the national meeting are invited to attend as guests of the St. Louis club. The Fort Worth Traffic Club, of Fort Worth, Tex., is the thirtieth club to join the national association.

The National Coal Association, through a special committee, calls upon the United States Coal Commission to take action looking to the furnishing, for the coal industry, of a continuous, regular and adequate supply of the means of transportation. "The railroads of the country should be given sufficient freedom, independence and revenue to enable them to obtain the money necessary to provide proper equipment and other facilities to meet their increasing business. They should be regulated only to an extent necessary to insure the proper use and distribution of these facilities when obtained." The causes of the present difficulties in the coal industry include lack of adequate railroad service and the commission is asked to compare the existing freight rates with the rates existing prior to the war; and also to study the effect of adequate transportation facilities on production and cost of coal.

Hearings before Interstate Commerce Commissioner Aitchison on a proposed revision of the coal car distribution rules, including the question of the right of the railroads to assign cars for railroad fuel, were resumed at Washington on November 15 and are expected to continue for some time. Among the witnesses on the first day were A. G. Gutheim, formerly of the Car Service Division of the American Railway Association, C. H. Markham, president of the Illinois Central, F. H. Alfred, president of the Pere Marquette, and E. J. Pearson, president of the New York, New Haven & Hartford, who testified that the only alternative to the assigned car rule at times of shortage is the confiscation of coal by railroads, which results in a general increase in coal prices. The National Coal Association also expected to put a number of witnesses on the stand. Representatives of the state railroad commissions also sat with Commissioner Aitchison.

J. D. Battle has been appointed traffic manager of the National Coal Association, with offices at Washington, D. C., effective December 1, succeeding John Callahan, who recently resigned to enter the coal brokerage business. Mr. Battle has had extensive railroad service, beginning with the Georgia Railroad, and later with Atlantic Coast Line and Charleston & Western Carolina joint terminals. From 1918 until the end of federal control he was connected with the Car Service Division of the United States Railroad Administration at Washington, handling the subject of intensive loading of, and efficient use of, freight cars. When the carriers were returned to their owners, he was appointed a traveling inspector for the American Railroad Association, being recalled to Washington in June of 1920 to assist in directing the work of various terminal committees that were organized for the purpose of clearing up accumulation, etc., resulting from the switchmen's strike. Since September 15, 1920, he has been assistant traffic manager of the National Coal Association.

Oral arguments as to whether the Interstate Commerce Commission should require the railroads to issue interchangeable mileage or scrip coupon tickets at reduced rates were heard by the commission at Washington on Wednesday. Francis I. Gowen, special counsel of the Pennsylvania, presented the argument for the carriers, contending that there is no justification for such a reduction in railroad revenues and S. Blumberg presented the argument for the National Council of Traveling Men's Associations, urging that a one-third reduction in rates on a $100 coupon book, would so stimulate freight and passenger traffic as to result in an increase in revenues. Commissioner Hall seemed somewhat skeptical as to whether freight traffic could be stimulated beyond what it has been during the past few months and asked whether Mr. Blumberg thought the record showed a basis for the determination of just and reasonable rates lower than the rates which the commission has already determined to be just and reasonable. Mr. Blumberg argued that Congress by passing the law leaving the fixing of the rate to the commission had intended the commission to make some reduction.

New England Governors' Committee Discusses Railroad Consolidation

The Joint New England Railroad Committee, appointed some months ago by the governors of the six New England States, sat in Boston last week to hear the views of shippers and others concerning the problem of helping the New England railroads to improve their conditions. The presiding officer was James J. Storrow, chairman of the committee. The first speaker was Henry C. Attwill, chairman of the Massachusetts Public Utilities Commission. Mr. Attwill thought that in all probability the railroads could recover their former financial health if they could have four additional sources of income as follows:

1.—Compensation from those who receive the special privilege of having their freight switched to and from private tracks.

2.—More adequate compensation from the United States Government for the carriage of mail.

3.—More revenue from the carriage of express matter.

4.—Compensation for the carriage of baggage.

The most generally expressed opinion among shippers was that the consolidation of New England railroads with trunk lines west of the Hudson River would be detrimental to the port of Boston and to New England generally. Charles A. Andrews, former president of the Associated Industries of Massachusetts elaborated this view.

Professor William J. Cunningham of Harvard University gave a brief outline of the recent freight rate history of the country, and set forth the advantages of consolidating New England lines with larger systems. New England merchants fear unfavorable changes in freight rates if such consolidations were to be carried out but Professor Cunningham reminded them that the Interstate Commerce Commission would see that New England was not dealt with unjustly. To objections about absentee management, the speaker referred to instances of that kind already in effect which are not inimical to the public interests; for example, the Atchison, Topeka & Santa Fe, which is managed from Chicago and the Boston & Albany which the New York Central people manage to the satisfaction of the citizens of Massachusetts.

On Friday, the third day of the hearing, John E. Oldham presented an elaborate argument in favor of the affiliation of the New England roads with trunk lines.

Coal Production

Preliminary returns to the Geological Survey on coal loaded at the mines in the week ended November 11 indicate a total production of 12,600,000 net tons; 10,700,000 tons bituminous and 1,900,000 tons anthracite. Revised estimates for the week ended November 4 show 10,617,000 tons of bituminous and 1,839,000 tons of anthracite. The rate of output of soft coal is now higher than in 1918 and 1921, and of course much higher than in 1919 when at the corresponding period the great strike of that year had begun; the present rate is lower than the same season in 1920.

The mine reports for the week ended October 28 indicate improved traffic conditions in Ohio, Westmoreland, and Somerset counties, Pennsylvania, Maryland, Northern West Virginia, the New River and Kanawha districts of Southern West Virginia, Western Kentucky, and all the trans-Mississippi states excepting Arkansas. Transportation disability grew more acute in Indiana, Pittsburgh and Central Pennsylvania districts, Pocahontas, Hazard, Harlan, and Southern Appalachian fields, and in southwestern Virginia. In Illinois, and the Panhandle of West Virginia, Winding Gulf, Tug River, and Logan districts, and in Alabama, the transportation situation remained practically unchanged. Reports of "no market" were received from operators in nearly all the states west of the Mississippi.

Shipments of soft coal through Hampton Roads declined dur-

ing the first week in November. Cargoes consigned to New England decreased to 149,466 tons and exports dropped to 10,379 tons.

Since August 21, approximately 10¾ million tons of bituminous coal have been dumped into vessels at Lake Erie ports. The tonnage dumped has been more than a million tons a week during the last 8 weeks, a high record for sustained heavy movement.

According to the Ore and Coal Exchange the total soft coal handled at Lake Erie piers during the week ended November 5 was 1,088,104 net tons, as compared with 1,026,388 tons in the week preceding. Stocks of bituminous coal on the commercial docks at Duluth, Superior, Ashland and Washburn increased from 1,034,520 net tons on October 1, to 1,946,875 tons on November 1. The supply of anthracite increased from 12,370, to 104,430 tons during the same period.

In spite of this large increase, however, the present reserves of soft coal are less than one-third of those on November 1, 1921, and the anthracite supply is only about one-eighth of that a year ago.

Car Relocation Orders

Additional orders for the movement of box cars to western railroads for the purpose of relieving the acute shortage in the northwest, and of 4,050 coal cars to the Louisville & Nashville, were issued by the Car Service Division of the American Railway Association following a meeting of executive and operating officers at Washington on Saturday. A conference was first held with Commissioner Aitchison, who is understood to have insisted that the practical railroad officers devise some plan for relieving a situation caused to a considerable extent by violations of car service rules and later a meeting was held at the offices of the Car Service Division.

Although a large number of cars of western line ownership have been returned under the order of October 26, the results were not fully felt on the roads which were not able to receive cars directly at Chicago, such as the Great Northern, Northern Pacific and Union Pacific, and those roads have had their box car supply depleted to a greater extent than others. Therefore, an additional program was set up by which all western line cars arriving at Chicago empty this week, regardless of ownership, were to be made up into solid trains of approximately 100 cars each to be delivered alternately to the three lines, although some provision was also made for the Soo Line. The first train under this arrangement left Chicago on Monday over the Illinois Central for the Union Pacific. The trains of empty cars were to be moved on the same schedules as fast freight and, if necessary, the program will be continued for another week.

Also to make available the maximum number of cars for this purpose orders were issued to the eastern lines to deliver 745 box cars daily at Chicago, of western line ownership if possible, but their own cars if necessary, as follows: Wabash, 15; Grand Trunk Western, 20; Pere Marquette, 25; Erie, 45; Michigan Central, 115; New York Central, 125; Pennsylvania, 100; Baltimore & Ohio, 200, and Philadelphia & Reading, 100, to be divided equally between the Baltimore & Ohio and the New York Central. Arrangements were also made for the daily delivery of 50 cars by the Central of New Jersey, 125 by the Boston & Maine, and 150 by the New Haven, some to be moved westward by Canadian lines, and a meeting was held on Monday to arrange for the movement of box cars from the Southern lines through St. Louis.

The coal car orders provided for the movement within 10 days to the Louisville & Nashville of 750 cars by the Chicago & Northwestern, 750 by the Chicago, Milwaukee & St. Paul, 250 by the Ann Arbor, 500 by the Pere Marquette, 500 by the Michigan Central, 150 by the Detroit & Toledo Shore Line, 100 by the Toledo, St. Louis & Western, 200 by the Minneapolis & St. Louis, 300 by the Chicago Great Western, 250 by the Minneapolis, St. Paul & Sault Ste. Marie, and 300 by the Great Northern.

Under the order of October 26 reports received by the Car Service Division show the delivery of 9,997 western box cars by the New England group of lines, including 6,314 loads, and 16,632 box cars from eastern lines to western lines, including 10,207 loads, at Chicago, Peoria and St. Louis. Also the New England lines have been delivering 200 to 300 empty coal cars a day to the anthracite coal roads.

Commission and Court News

Interstate Commerce Commission

The commission has declined a request of President Howard of the American Farm Bureau Federation that it order an embargo on Canadian grain moving over transportation lines in the United States.

The Interstate Commerce Commission's Bureau of Tariffs has published the third issue of its schedule of sailings of steam vessels which are registered under the laws of the United States and which are intended to load general cargo at ports in the United States for foreign destinations.

The Interstate Commerce Commission has issued orders permitting the states of Utah and Nevada and the chambers of commerce of Salt Lake City and Provo, Utah, to intervene in the case of the application of the Southern Pacific to acquire control by lease and stock ownership of the Central Pacific. The Union Pacific and the Southern Pacific have filed briefs with the commission on the petition of the Union Pacific for a dismissal of the Southern Pacific application which was argued orally on November 4.

The commission has issued orders permitting the states of Utah and Nevada and the chambers of commerce of Salt Lake City and Provo, Utah, and San Francisco and Fresno, Calif., to intervene in the case of the application of the Southern Pacific to acquire control by lease and stock ownership of the Central Pacific. The Union Pacific and the Southern Pacific had filed briefs with the commission on the petition of the Union Pacific for a dismissal of the Southern Pacific application which was argued orally on November 4.

The Public Utilities Commission of Kansas has filed a complaint with the Interstate Commerce Commission praying for reduction in the rates on grain, hay and grain products in Western territory which were increased 35 per cent in 1920, reduced 13 per cent by a decision of the Interstate Commerce Commission last year, but were not included in the general 10 per cent reduction ordered by the commission this year. The commission is asked to establish reasonable and non-discriminatory rates. It has assigned the case for a hearing before Examiner Hunter at Washington on December 11.

I. C. C. to Take Evidence on Southern Pacific Application

The Interstate Commerce Commission on November 14 announced that after considering the motion of the Union Pacific to dismiss the application of the Southern Pacific to acquire control of the Central Pacific it had been voted that the commission will not, without the hearing of any evidence, decide the question of jurisdiction, or its power to grant or deny in whole or in part the application of the Southern Pacific, or the propriety of taking such action. The motion to dismiss the application without the taking of testimony was therefore denied, and the hearing set for November 21, will proceed.

Court News

Placing Freight Cars So as to Obstruct View of Crossing

The placing of freight cars upon a side track so that the view of a crossing is obstructed is not an independent ground of negligence, so that where the evidence in an action for damages to an automobile by collision at a crossing was conflicting as to whether the bell was rung, the Iowa Supreme Court holds that the trial court's error in submitting the negligence of placing box cars so as to obstruct the view, which was the only other ground of negligence, as an independent ground of recovery, was prejudicial error, necessitating reversal.—Anderson v. U. S. R. A. (Iowa) 188 N. W. 826.

Foreign Railway News

New Branch of Mexican National to Be Put Into Operation

At odd times for the last several years construction of the extension of the branch line of the National Railways of Mexico from Cuatro Cienegas to Sierra Mojada has been carried on. It is now stated that the line is practically finished and will soon be placed in regular operation. It connects with the Mexican Northern Railroad at Sierra Mojada and with the Eagle Pass-Torreon division of the National Railways at Monclova. It is about 150 miles long and traverses a region that is known to be rich in minerals and coal.

French Railway Labor Act Revised

The bill providing for a revision of the working day on French railroads effects small economies in the operation of the roads, which are now working under a heavy deficit, according to Commerce Reports. A distinction is made between active labor and mere presence on the job. In the former class the 8-hour day still obtains, while in the latter the length of the day varies according to the nature of the work. Each employee must put in 2,504 hours of work a year, with extra pay for overtime. The indefinite nature of this provision for overtime payment is expected to neutralize the good features of the bill.

Allowance is made for a reduction of 30,000 in forces and a decrease of 250,000,000 francs in the annual pay roll, while the eight-hour day law increased the operating forces by 110,000 and the pay roll over 1,000,000,000 francs.

Track Improvements on Mexican National

The entire division of the National Railways of Mexico between San Luis Potosi and Tampico is to be laid with new ties and ballast. The contract for getting out the ties has already been let. It is stated that this division is to be practically rebuilt in many places, the grade reduced and the line otherwise improved. In order to promote the conservation of ties for use in Mexico instead of sending them out of the country, especially to the southwestern part of the United States, the Mexican government recently placed an export duty, equivalent to about 47½ cents on each tie. It is stated that in the Sierra Madre mountains of the state of Chihuahua there was quite an industry of manufacturing ties for export to the United States. It is expected that the new duty will be prohibitive and that the railroads of Mexico will now be able to get all the ties they may need at lower cost than formerly.

Fog Signaling in Great Britain

The first of the autumn fogs descended upon the London area one day recently, and the commuting population made the train journey to town to the accompaniment of a fusillade of fog-signaling, according to the Times (London).

The men who take up their station at distant signals to protect the traffic are drawn from the permanent way staff, and a list of the men available is kept at every station. On the occurrence of fog, these men are either called for special duty, or voluntarily report themselves to the signalman, and, after lighting their familiar fire and arming themselves with a supply of detonators (i.e., torpedoes), take up their responsible duties.

While the signal is in the danger position the fogman must keep two detonators on the rail and show a red lamp or flag to the driver of the train approaching the signal. If the "line clear" signal is given the detonators are removed. Sometimes the detonators are placed in position by hand, but when the fogman has to protect more than one track, detonator-laying machines are used.

Even these comparatively simple arrangements involve the railways in considerable cost. One railway in the London district, which has not a large suburban traffic, nevertheless uses half a million detonators a year, and these cost 2s. 6d. per dozen. The total number of detonators used on all the railways for various purposes, but mainly for fog signaling, runs into many millions a year. During conditions of general fog thousands of men are engaged in fog-signaling work.

Formation of the International Union of Railways

Representatives of European railways, meeting at Paris from October 17 to 21, formed the International Union of Railways (abbreviated in French to U. I. C.). The meeting at Paris was agreed upon at the Genoa conference and the principal purpose of the newly-formed union is to facilitate the movement of international traffic. M. Mange, general manager of the Orleans Railway, was chosen to head the union, which will have its headquarters at Paris.

The administration of the association will be in the hands of a managing board, representing the countries forming the union. Assisting this board will be five commissions as follows:

1. On Passenger Traffic.
2. On Freight Traffic.
3. On Reciprocal Accounts and Exchanges.
4. On Exchange of Rolling Stock.
5. On Technical Questions.

A general assembly of all members of the association will be held regularly at five-year intervals. Voting will be, under certain safeguards, proportionate to route mileage. Decisions cannot be made binding without sanction of governments of all nations affected.

Countries represented at the formation of the union were: Great Britain, Austria, Germany, Belgium, Bulgaria, Denmark, Spain, Esthonia, Greece, Netherlands, Hungary, Italy, Lettonia, Lithuania, Luxembourg, Norway, Poland, Portugal, Roumania, Saare Valley, Serbia, Sweden, Switzerland, Czecho-Slovakia, France, the Oriental Railways and the League of Nations. Japan and China were represented but will not take an active part in the work of the association until the re-opening of the Trans-Siberian Railway again puts them into communication by rail with Europe.

Railway Labor Situation in Britain Better Than Ever Before

"The brightest feature of the British railway situation is found in the happy relations between the companies and their men," according to The Engineer (London). "Never, during the hundred years of railways, has this aspect of the railway position been so good. There is, at present, a noticeable esprit de corps among the men, a greater desire to give a day's work for a day's pay, both in the operating and the manufacturing and repairing branches, that is beneficial to men and masters, and consequently therefore to the railway proprietors and railway users. We will not allow ourselves to think that a fear of the effects on labor of railway grouping is the cause of this change; though it must be recognized that one consequence of the big amalgamations now being made may be considerable reductions in the number of men employed.

"We prefer to believe, and will almost go as far as to affirm, that the attitude of the men is the result of the unions having been recognized and of the men themselves having been given a greater interest in the operation of the railways. This interest is not as great as Sir Eric Geddes intended when, in the outline of his proposals, made public towards the end of June, 1920, he laid down that the boards of management should include representatives of the employees, elected from and by the workers. Subsequent discussions, directly between the companies and the men's unions, led to clauses being agreed upon for inclusion in the Railways Bill—now the Railways Act, 1921—for the recognition of the three railway unions, the continuance of the Central and National Wages Boards, and for the establishment of Whitley Councils.

"The Whitley Councils cover local departmental committees at stations and depots, sectional councils on each railway representing the various grades, and a railway council for each railway. Above the railway councils is the Central Wages Board, and the final court is the National Wages Board. Both the companies

and the men have expressed their determination to give the conferences a fair trial, and, judging by what has happened since the councils were inaugurated in April, they would seem to be doing all the good that was expected of them. . . . ."

Railroad Construction in Finland

The president of Finland has recently sanctioned the government's proposition to the Finnish diet, covering a program of railroad construction to be handled during the next five years, according to Commerce Reports. This program is based upon the assumption that 75,000,000 Finnish marks could be devoted to such work annually. Altogether the different lines recommended for construction in this connection have a total somewhat in excess of 500 miles. Therefore, it may be expected that Finland will construct about 100 miles of railroad annually during the next few years.

In addition to the above construction work that is to be carried forward under government auspices, provision is made for additional construction whenever the various communes will provide the necessary funds for supplementary construction. Obviously it is not possible to estimate the extent to which public sentiment will support such a program, but reports indicate that something along these lines may develop.

Sir William Acworth Compares Railroad Operating Statistics of Various Countries

Sir William Acworth recently addressed the Institute of Transport on British Railway Operating Statistics, making some comparisons between them and similar statistics of other countries. The average length of haul in Great Britain was 58 miles, about the same as in Germany. The average freight train load in Britain was 135 (long) tons and per route mile British railways carried 900,000 tons per annum, as compared with one million in Germany and Russia and 1,650,000 tons in the United States. The average train load in other countries was: Austria, 200; Canada, 400; China, 250; France, 150; Germany, 225; India, 200; Japan (narrow gage), 140; U. S. A., 650.

This comparison, he said, suggested an important practical conclusion. There was room on the existing railways for the existing number of trains. Improvement in train loading ought at least to keep pace with increase of traffic, and especially having regard to the effect of the new grouping, he had no doubt that it would. Further, there was the prospect of electrification increasing freedom of movement on the most crowded sections. If this were so, British railways ought to be able to get along for many years to come with no new capital expenditure for widening main through routes.

The average number of cars per train seemed to be much the same—35 to 40—in England, France, Germany, and the United States. The capacity of the average French or German car was probably 40 per cent higher than the English standard. The American car was four times as large. As to the proportion of loaded to empty cars there seemed also little difference, at least between England, Germany, and America. But the car mileage per diem showed a startling difference. In England it was roughly 9 miles; in Germany 21; in America—as a whole—it was now about 24 though under stress of war it at one time got to over 30.

Dealing with the effect of railway charges on the cost of living, he said statistics showed that the average haul of potatoes was 114.68 miles, and the average charge per ton mile 2½d.—roughly, 8 lb. for 1d. With farmers selling potatoes at less than £2 per ton, farmer and railway between them received 1.625d. for 5 lb. The average housewife could work out from her grocer's bill the amount of what were euphemistically called "other expenses." A year's experience as a member of the Railway Rates Advisory Committee had convinced him that the railways tried to give the shippers what they wanted.

The constant plea of the shippers was that they wanted to get back to pre-war conditions, but they could save a great deal of money by adopting new and more economical methods. The extravagant retail methods of British shippers were shown by the fact that they employed 1,360,000 cars to move twenty thousand million ton miles, while Germany had 700,000 cars to move 38,000 million ton miles and France 332,000 cars to move nearly 18,000 million ton miles.

Equipment and Supplies

Locomotives

THE GEORGIA RAILROAD is inquiring for 5 locomotives.

THE DELAWARE & HUDSON is inquiring for 1 locomotive tender.

THE LEHIGH VALLEY is inquiring for 30 locomotive tenders.

THE COLORADO MIDLAND is inquiring for one Mikado type locomotive.

THE CHICAGO, BURLINGTON & QUINCY is inquiring for 50 Mikado type locomotives and 10 Santa Fe type engines.

THE CENTRAL OF NEW JERSEY, reported in the *Railway Age* of November 4 as inquiring for 4 Pacific type locomotives, has ordered 5 Pacific type locomotives from the Baldwin Locomotive Works. This company is now inquiring for 10, 8-wheel switching locomotives.

Freight Cars

BALTIMORE & OHIO is inquiring for 2,000 hopper cars of 55 tons' capacity.

THE ULEN CONTRACTING CORPORATION, 120 Broadway, New York City, is inquiring for 35 flat cars.

THE UNION PACIFIC has placed an order with the American Car & Foundry Company for 100 tank cars.

THE CENTRAL RAILROAD OF BRAZIL is inquiring through the car builders of this country for prices on 200 box cars and 200 gondola cars.

THE GREAT SOUTHERN REFINING COMPANY, Lexington, Ky., is inquiring for about 80 tank cars of from 6,000 to 10,000 gal. capacity.

THE EAST JERSEY RAILROAD & TERMINAL COMPANY has placed an order with the American Car & Foundry Company for 36, 50-ton tank cars of 10,000 gal. capacity.

WATSON, ROBB & COMPANY has purchased 13 service box cars from the Canadian Car & Foundry Company, which they have converted into two office cars, five bunk cars, two cook cars and four service dining cars.

THE CHICAGO, ROCK ISLAND & PACIFIC, reported in the *Railway Age* of October 14 as inquiring for 500 box cars and 500 gondolas, has ordered the former from the Western Steel Car & Foundry Company and the latter from the American Car & Foundry Company. This company is now preparing specifications on an additional 1,500 cars, also reported in the *Railway Age* of October 14, with the above inquiry.

New Freight Cars for the Southern Pacific

The immediate construction of 7,000 freight cars, to cost more than $8,000,000, has just been authorized by the executive committee of the Southern Pacific Company. This new equipment, which will be delivered during 1923, does not include refrigerator cars for handling perishables, as the company's supply of refrigerators is provided by the Pacific Fruit Express Company, in which the Southern Pacific owns a one-half interest. The new equipment program of the Pacific Fruit Express, soon to be announced, will add a substantial number of refrigerators to the 21,598 it now owns. Plans for the construction of the new cars for the Southern Pacific are nearing completion and it is expected that a large proportion of the cars will be built on the Pacific Coast with Pacific Coast materials and labor. The new cars will be of the most modern design. The total number of cars owned by the Southern Pacific Company at present is more than 58,000.

Passenger Cars

THE NATIONAL RAILWAYS OF MEXICO are in the market for 10 steel mail cars, 40 ft. long.

THE CENTRAL OF BRAZIL contemplates buying in the near future between 50 and 100 cars of various types for passenger service.

THE PENNSYLVANIA has ordered 3 gasoline motor cars from the J. G. Brill Company. These cars are for use on the Smyrna branch, Bustleton branch and the Berwick branch.

THE BROOKLYN RAPID TRANSIT COMPANY, reported in the *Railway Age* of July 22 as contemplating the purchase of 50 cars, is now injuiring for 50 trailer cars for use in its subways.

THE CENTRAL OF NEW JERSEY, reported in the *Railway Age* of October 21 as having placed orders for 65 cars for passenger service, has placed additional orders for 25 coaches with the American Car & Foundry Company, and 25 coaches with the Standard Steel Car Company.

Iron and Steel

THE CHICAGO & NORTH WESTERN is inquiring for 500 tons of bar iron.

THE CHICAGO & WESTERN INDIANA has ordered 5,000 tons of rail from the Illinois Steel Company.

THE NORTHERN PACIFIC has ordered 127 tons of steel from the Minneapolis Steel & Machinery Company for repairing its Mississippi river bridge.

Machinery and Tools

THE GULF & SHIP ISLAND has ordered from the Niles-Bement-Pond Company a 5-ton, 72-ft. span overhead crane.

THE LAKE ERIE & WESTERN has placed an order with the Shepard Electric Crane & Hoist Company for a 1¼-ton hoist.

THE BALDWIN LOCOMOTIVE WORKS has ordered one, 130-in. by 84-in. by 20-ft. planer from the Niles-Bement-Pond Company.

Signaling

THE CITY OF PHILADELPHIA has placed an order with the Hall Switch & Signal Company for 45 single unit, three color "searchlight" signals.

THE MISSOURI, KANSAS & TEXAS has ordered from the Union Switch & Signal Company interlocking for Frisco Crossing, Okla., where the M. K. & T. and the St. L.-S. F. cross the Red River on a joint track. The interlocking machine has ten mechanical levers and three electric switch units, style S-8.

Kadel & Herbert

Collision at a Junction on the Northern Railway (France) at La Briche Fort, Six Miles from Paris

Supply Trade News

W. W. Sayers, representative of the **Link-Belt Company,** with headquarters at Chicago, has been promoted to chief engineer of the Philadelphia works and Eastern operations, with headquarters at Philadelphia.

A. H. Hunter, president of the **Atlas Steel Corporation,** Dunkirk, N. Y., has resigned as president, but is still a member of the board. No action has been taken as yet toward electing a successor to Mr. Hunter.

The Chicago Malleable Castings Company, Chicago, has acquired from the Railway & Traction Supply Company of Chicago, all rights for the manufacturing and selling of the Little Giant and Hercules bumping posts.

The Southern Dry Dock & Shipbuilding Company, Orange, Tex., has arranged for a change of name to the **Orange Car & Steel Co.** Its operations in the future will be concentrated on steel railroad car construction and repairs.

F. F. Rohrer, assistant to manager of both the power and railway departments of the **Westinghouse Electric & Manufacturing Company,** has been appointed general contract manager of that company. In his new appointment, which is effective immediately, Mr. Rohrer will be a member of the staff of W. S. Rugg, general sales manager. In his new position, Mr. Rohrer assumes responsibility for service to customers under contracts and will have general supervision of all contract and order work of the company. In addition to this general work, he will continue to have direct charge of the contract work of the power and railway departments which duties he performed in his previous position. Mr. Rohrer, wsa born in Harrisburg, Pa., April 22, 1876, and attended school there until 1895. He entered the employ of the Westinghouse Company as a student in 1896. After serving in the shops for four years, during which time he obtained extensive training in the manufacturing and testing departments he was transferred to the sales department. His services in the latter department have included a number of positions of responsibility. During the war, Mr. Rohrer was a member of the Committee of the War Industries Board appointed to conserve the production of turbine-generating equipment for government needs. After the armistice was signed, he became the representative of the Westinghouse Company in the settlement of contracts which were terminated as a result of the ending of the war. When this work was completed, he served in the capacity of assistant to the managers of both the power and railway departments, which position he held until his present appointment.

F. F. Rohrer

The Norwalk Iron Works Company, South Norwalk, Conn., has opened a Chicago office at 627 W. Washington boulevard in charge of L. R. Bremser, who for 13 years was associated with the Gardner Governor Company.

E. C. Wilson, formerly connected with the U. S. Light & Heat Corporation and the Vapor Car Heating Company, with offices at Chicago, has been appointed western sales manager for the **Ohio Locomotive Crane Company** of Bucyrus, Ohio, with offices in the Railway Exchange Building, Chicago.

Railway Construction

ATLANTIC COAST LINE.—This company has awarded a contract to Fairbanks, Morse & Co., Chicago, for the construction of a 150-ton concrete coaling station at Jesup, Ga.

BALTIMORE & OHIO.—This company has placed a contract with the Seaboard Construction Company, Philadelphia, Pa., covering the remodelling of second-hand girders and the erection of a new superstructure for the bridge carrying its tracks across Stone Coal creek, Macpelah Junction, W. Va. The new bridge at this point is to consist of a 55-ft. through plate girder span, replacing a timber trestle. Remodeled second-hand girders are to be used. For this remodeling, certain new material will be required, which is to be furnished by the McClintic-Marshall Company, under the tonnage contract recently placed with them by the railroad.

CANADIAN NATIONAL.—This company has awarded contracts to Symes & Company, Fort William, Ont., for the laying of 12,500 ft. of 8-in. water pipe at Mount, Ont.; to the Jamieson Construction Company, Edmonton, Alta., for the laying of 6,500 ft. of 8-in. water pipe at North Battleford, Sask.; to J. D. McArthur, Winnipeg, Man., for a dam at Rivers, Sask.; to the Northern Construction Company, Winnipeg, for a water supply system at Pattee, Sask.; and to P. W. Graham, Moose Jaw, Sask., for the construction of an addition to the office building at Saskatoon, Sask.

CHICAGO, ROCK ISLAND & PACIFIC.—This company closed bids on November 14 for a frame icehouse at Eldon, Ia., to cost approximately $12,000.

CHICAGO, ROCK ISLAND & PACIFIC.—This company, with the Vicksburg, Shreveport & Pacific, has been ordered by the Louisiana Public Service Commission to build sheds over the train platforms at the joint station at Ruston, La.

COLORADO, COLUMBUS & MEXICAN.—This company, through its attorney, John Phillips, of Wichita Falls, Texas, has filed a petition with the Interstate Commerce Commission for a certificate authorizing the construction of 550 miles of electric railroad in New Mexico, Texas and Arizona, including a main line from Columbus, N. M., on the Mexican border, to Farmington on the Denver & Rio Grande, with various branches including one to El Paso, Texas. The company has been incorporated in New Mexico with an authorized capital stock of $5,000,000 and asks the commission for authority to issue $20,000,000 of bonds to be sold at not less than 85.

GULF COAST LINES.—This company will construct a six-stall concrete roundhouse at Brownsville, Tex., to cost approximately $50,000.

ILLINOIS CENTRAL.—This company, which was reported in the *Railway Age* of November 11 as closing bids November 8 for a 100,000 gal. creosoted water tank at Herrin, Ill., has awarded a contract for the work to Joseph E. Nelson & Sons, Chicago. This company will also improve its water facilities at Calumet, Iowa.

KANSAS CITY SOUTHERN.—This company has been ordered by the Louisiana Public Service Commission to build a station at De Quincy, Ia.

MINNEAPOLIS & ST. LOUIS.—This company has awarded a contract to the Railroad Water & Coal Handling Company, Chicago, for the construction of a water treating plant of 25,000 gallons' capacity at Manly, Iowa.

SAN ANTONIO & ARANSAS PASS.—This company has awarded a contract to the Virginia Bridge & Iron Company for the construction of a bridge over the Brazos river near Wallis, Texas.

ST. LOUIS-SAN FRANCISCO.—This company closed bids on November 13, for a 300-ton concrete coaling station at Fort Smith, Ark.

ST. LOUIS-SAN FRANCISCO.—This company will construct a storeroom at Ft. Smith, Ark.

Railway Financial News

ALABAMA & MISSISSIPPI.—*New Company.*—See *Mississippi & Alabama.*

BOSTON & MAINE.—*Bonds Sold.*—A banking syndicate composed of Merrill, Oldham & Co., Paine, Webber & Co. and Blodget & Co. of Boston, Cyrus Peirce & Co. of San Francisco and Reilly, Brock & Co. of Philadelphia has sold $4,000,000 6 per cent mortgage bonds due January 1, 1933, at 95½ and interest, to yield about 6.62 per cent. These bonds are part of an issue of $112,985,979 and are secured by a first mortgage on 1,651 miles of line, subject only to $2,838,000 underlying bonds on 153 miles.

CHICAGO GREAT WESTERN.—*Asks Authority to Issue Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $10,206,000 of first mortgage, 50-year, 4 per cent gold bonds and $3,580,000 of 4 per cent preferred stock to be exchanged for bonds of the Mason City & Fort Dodge.

GEORGIA, FLORIDA & ALABAMA.—*Abandonment of Boat Line Authorized.*—The Interstate Commerce Commission has issued a certificate authorizing the abandonment of operation of a boat line between Carrabelle and Appalachicola, Fla., 32 miles, which has been operated by the company as a part of its line of railroad. The commission says that it is apparent that the boat line serves no substantial public need which cannot be met adequately by other available means of transportation.

ILLINOIS CENTRAL.—*Authorized to Issue Bonds.*—The Interstate Commerce Commission has authorized an issue of $968,000 of refunding mortgage 4 per cent gold bonds to be pledged from time to time as collateral security for short term notes.

INTERSTATE.—*Asks Authority to Issue Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue $1,500,000 of common stock for the purpose of purchasing 1,000 all steel hopper cars.

KENTWOOD & EASTERN.—*Asks Authority to Abandon Line.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its line from Kentwood to Scanlon, Miss., 16.53 miles.

MACON & BIRMINGHAM.—*Operation to Cease.*—At a hearing in the Superior Court of Macon, Ga., on November 11, Judge H. A. Mathews ordered the suspension of all service on this road, effective November 15. He stated his order was based upon the fact that further operation was unsafe for human life, due to the poor condition of the road bed, and that the receiver had no funds and had exhausted all his credit. This road is 97 miles long, from Sofkee, Ga., westward to La Grange. The Official Guide shows the line as operated only for freight service.

MARIETTA & VINCENT.—*Asks Authority to Abandon Line.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line from Moore's Station to Vincent, Ohio, 10 miles.

MISSISSIPPI & ALABAMA.—*To Reopen Line.*—Under this name a company has been organized in Alabama for the purpose of rehabilitating and continuing the operation of the 17 miles of line formerly operated as part of the Alabama & Mississippi between Vinegar Bend, Ala., and Leakesville, Miss. Operation on the Alabama & Mississippi between Vinegar Bend and Pascagoula, Miss., 78 miles, was discontinued August 14, 1922.

NEW YORK CENTRAL LINES.—*Equipment Trust Authorized.*—The Interstate Commerce Commission has authorized the New York Central lines to assume obligation and liability in respect of $12,660,000 of 4½ per cent equipment trust certificates to be issued by the Guaranty Trust Company of New York, and to be sold at not less than 95.

PACIFIC SOUTHWESTERN.—*Asks Authority to Issue Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue $100,000 of stock to be used in the

construction of a railroad from Lompoc to White Hills, Calif., 4 miles.

SANTA FE & LOS ANGELES HARBOR.—*Authorized to Issue Stock.*—The Interstate Commerce Commission has authorized this company to issue $50,000 of capital stock to be sold at not less than par and the proceeds used for construction purposes and the Atchison, Topeka & Santa Fe has been authorized to acquire control of the company by purchase of its capital stock and by lease.

SAVANNAH & SOUTHERN.—*Sale Ordered.*—This 32-mile line will be sold under court order on December 5. Julius Morgan was appointed receiver for the road March 2, 1922.

UPPER MERION & PLYMOUTH.—*Authorized to Issue Stock.*—The Interstate Commerce Commission has authorized this company to issue $350,000 of common stock for the purpose of acquiring additional equipment and discharging certain indebtedness.

Tentative Valuations

The Interstate Commerce Commission on November 15 made public its tentative valuation of the properties of the Rutland and the Addison railroads as of June 30, 1917. The final value of the property owned by the Rutland is given as $21,881,255 and that of the property used, including that leased from the Addison, the Central Vermont, the New York Central and private parties as $22,205,821. The outstanding capitalization on date of valuation was $19,952,600. The investment in road and equipment, including land, was stated in the books of the carrier at $22,500,622. This is readjusted in the report to $20,269,100.

The commission has also issued its tentative report on the valuation of the New Orleans Great Northern as of 1916, in which it states the final value as $7,201,388. The capital obligations outstanding as of the valuation date amounted to $15,923,000. The investment in road and equipment as stated on the books of the company was $16,045,668 which is readjusted by the commission to $15,201,241.

The commission has also issued tentative valuations in which the final value of the property owned and used is stated as follows:

Shreveport, Houston & Gulf, 1918, owned $92,578.
Yosemite Valley, 1916, owned $3,436,492.

Dividends Declared

Alabama Great Southern.—Common, 3½ per cent, semi-annually, payable December 28 to holders of record November 29; preferred, 3½ per cent, semi-annually, payable February 16 to holders of record January 19.

Canadian Pacific.—Common, 2½ per cent, quarterly, payable December 30 to holders of record December 1.

Catawissa.—1st and 2nd preferred, $1.25, payable November 18 to holders of record November 3.

Chicago & North Western.—Common, 2½ per cent, semi-annually; preferred, 3½ per cent, semi-annually; both payable January 15 to holders of record December 14.

Chicago, Rock Island & Pacific.—6 per cent preferred, $3.00, semi-annually; 7 per cent preferred, $3.50, semi-annually; both payable December 30 to holders of record December 8.

Colorado & Southern.—Common, 3 per cent, annually; first preferred, 2 per cent, semi-annually; second preferred, 4 per cent, annually; all payable December 30 to holders of record December 16.

Pittsburgh, Bessemer & Lake Erie.—Preferred, 3 per cent, semi-annually, payable December 1 to holders of record November 15.

Southern Pacific.—1½ per cent, quarterly, payable January 2 to holders of record November 29.

Union Pacific.—Common, 2½ per cent, quarterly, payable January 2 to holders of record December 1.

Trend of Railway Stock and Bond Prices

	Nov. 14.	Last Week	Last Year
Average price of 20 representative railway stocks	66.27	70.31	56.21
Average price of 20 representative railway bonds	85.64	86.65	78.77

THE EXPLOSION of the boiler of a locomotive of a freight train of the New York Central at Moreland, N. Y. on the night of November 11 killed four employees and injured three. This engine was the second one of a double head southbound freight, and the boiler was thrown into the air and fell 400 ft. ahead of the train and the leading locomotive ran into it.

Railway Officers

Executive

John G. Walber, whose appointment as vice-president in charge of personnel of the New York Central was announced in the *Railway Age* of October 28, page 823, was born on April 12, 1871, at Cincinnati, O. He was educated in the public schools of that city. He entered railway service in 1885, since which he has been consecutively: To 1893, clerk in the office of president and general manager, Ohio & Mississippi; 1893 to 1899, private secretary to the second vice-president and traffic manager of the Baltimore & Ohio Southwestern at St. Louis, Mo.; 1899 to 1904, chief clerk in the office of the vice-president and general manager of the same road at Cincinnati, O.; 1904 to 1908, assistant to the general manager, with the same headquarters; 1908 to 1909, general superintendent of transportation of the Baltimore & Ohio at Baltimore, Md.; 1910 to 1912, assistant general manager of the Baltimore & Ohio; 1912 to 1914, assistant to third vice-president; 1914 to 1921, secretary of the Bureau of Information of the Eastern Railways at New York; 1921 to the time of his recent appointment, executive secretary of the bureau.

Operating

V. S. Burnham has been appointed trainmaster of the San Joaquin division of the Southern Pacific, with headquarters at Bakersfield, Cal.

P. E. Odell has been appointed general manager of the Gulf, Mobile & Northern and the Meridian & Memphis, with headquarters at Mobile, Ala.

R. G. Parks has been appointed superintendent of car service of the Atlanta, Birmingham & Atlantic and the office of car accountant has been abolished.

O. A. O'Neill, yardmaster of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, has been promoted to trainmaster, with headquarters at Montevideo, Minn.

Traffic

E. N. Todd has been appointed freight traffic manager of the Canadian Pacific.

W. M. Kirkpatrick has been appointed general freight agent of the Canadian Pacific.

George Stephen has been appointed assistant freight traffic manager of the Canadian Pacific, Western Lines, with headquarters at Winnipeg, Man.

H. F. Twining has been appointed general agent of the Ft. Dodge, Des Moines & Southern, with headquarters at Ft. Dodge, Iowa, succeeding **A. L. Hillman,** resigned.

A. L. Still, passenger agent of the Gulf Coast Lines, with headquarters at Brownsville, Tex., has been promoted to assistant general agent, with headquarters at Mexico City, Mexico.

G. W. Sloan has been appointed assistant general freight agent of the Nashville, Chattanooga & St. Louis, with headquarters at Nashville, Tenn., succeeding W. L. Nichol, promoted.

H. J. Niemann, assistant general freight agent of the Vicksburg, Shreveport & Pacific, with headquarters at New Orleans, La., has been promoted to general freight agent, with the same headquarters.

M. D. Riggs, passenger agent of the St. Louis-San Francisco, with headquarters at Cincinnati, O., has been promoted to district passenger agent, with headquarters at Fort Worth, Tex., succeeding **E. Mitchell,** promoted.

Mechanical

W. B. Whitsitt has been appointed assistant mechanical engineer of the Baltimore & Ohio and **W. R. Hedeman** has been appointed chief draughtsman.

J. E. O'Brien has been appointed manager of the mechanical department of the Seaboard Air Line, effective November 15. Mr. O'Brien will report to the president and to the vice-president and general manager. Mr. O'Brien was born on December 4, 1876, at Stillwater, Minn., and was graduated from the University of Minnesota in 1898, in which year he entered railway service as a special apprentice on the Northern Pacific at Livingston, Mont. From November 1, 1901, to November 25, 1903, he was in charge of general inspection of material and tests for that company at St. Paul, Minn. On the latter date he became master mechanic of the Dakota division at Jamestown, N. D. From December 1, 1904, to August 1, 1909, he was assistant shop superintendent at South Tacoma, Wash. On the latter date he was promoted to mechanical engineer, with headquarters at St. Paul. On January 1, 1910, he left the Northern Pacific to become superintendent of motive power of the Western Pacific, with headquarters at San Francisco. In 1913 he left this position to become assistant superintendent of motive power of the Missouri Pacific and a short time thereafter was promoted to superintendent of motive power, which position he resigned in the early part of 1922.

J. E. O'Brien

Engineering, Maintenance of Way and Signaling

Irwin H. Schram, regional engineer of the Hornell region of the Erie with headquarters at Hornell, N. Y., has been transferred in a similar capacity to the Chicago region with headquarters at Chicago.

B. B. Shaw, division engineer of the Chicago, Rock Island & Pacific, with headquarters at Little Rock, Ark., has resigned to become chief engineer of the Cuba Railway, with headquarters at Camaguay, Cuba.

Obituary

F. H. Ustick, general superintendent of the Chicago, Burlington & Quincy, with headquarters at Burlington, Iowa, died on November 13, at Denver, from pneumonia, which followed an operation for appendicitis.

A. F. Vickroy, superintendent of the Union Pacific, with headquarters at Denver, Colo., whose death on October 17 was reported in the *Railway Age* of October 28, page 824, was born on January 16, 1861, at Avoca, Neb. He entered railway service in 1873 as a supply clerk on the Kansas Pacific (Union Pacific) at Ellis, Kan., and from 1874 to January, 1879, held the positions of shop clerk at Wamego, Kan., timekeeper in the motive power department at Armstrong, Kan., telegraph operator at Carr, Colo., clerk and operator in the division superintendent's office at Denver, Colo., and agent at Hugo, Colo., consecutively. When the Union Pacific absorbed the Kansas Pacific in January, 1879, he was transferred to Wallace, Kan., where he remained until May, 1881, when he was promoted to dispatcher, with headquarters at Denver, Colo. In January, 1883, he was promoted to chief dispatcher at Como, Colo. (Colorado & Southern), and from January, 1884, to September, 1901, he was dispatcher and chief dispatcher at Denver, Colo. He was promoted to superintendent of the Kansas division, with headquarters at Ellis, Kan., which position he held until September, 1906, when he was made assistant superintendent of the Wyoming division, with headquarters at Cheyenne, Wyo. On April 1, 1907, he was promoted to superintendent of the Colorado division, with headquarters at Denver, Colo., and held this position until the time of his death. From April 1, 1907, to May 1, 1915, he was also president of the Denver Union Depot Company.

O. L. Kinney, general western passenger agent of the Pere Marquette, with headquarters at Chicago, died on November 10 from an attack of apoplexy while driving from his home in Oak Park to his office in Chicago. Mr. Kinney was born in 1875 and entered railway service in 1894 as an office boy with the Grand Trunk, rising through various promotions to the position of ticket agent. He entered the employ of the Pere Marquette on April 28, 1902, as a ticket agent at Toledo, O., later being promoted to city passenger agent and division passenger agent, with headquarters at Toledo. In 1914, he was promoted to general western passenger agent, with headquarters at Chicago, which position he was holding at the time of his death. During the period of Federal control he was employed as division passenger agent for the Pere Marquette group of lines at Chicago and upon the dissolution of this group resumed his former duties and title.

O. L. Kinney

Emil E. Kruthoffer, auditor of freight accounts of the Cleveland, Cincinnati, Chicago & St. Louis, died at his home in Cincinnati on November 5. Mr. Kruthoffer was born in Batavia, Isle of Java, May 22, 1853, his father at that time being manager of a Dutch East Indies trading company. He was educated in Europe and was a graduate of a college at Frankfort, Germany. At the completion of his studies, at the age of 19, he came to America, remaining in New York City for a short time. He then went to Ohio, locating in Noble county as bookkeeper for his uncle in a large country store. Subsequently he was employed as a steward, or clerk, on a steamboat plying the Ohio river. In 1872 he entered railroad service with the Cleveland, Marietta & Pittsburgh as bookkeeper. He was assistant auditor from 1875 to 1877 and auditor from 1877 to January 1, 1882, on which latter date he became a clerk under E. B. Thomas, general manager of the Cleveland, Columbus, Cincinnati & Indianapolis, which in 1889 was merged by consolidation into the Cleveland, Cincinnati, Chicago & St. Louis Railway. He later became traveling auditor, which position he held until April 1, 1890, when he was appointed freight accountant, the latter position being changed in title to auditor of freight accounts on July 1, 1905.

E. E. Kruthoffer